

The Prehistoric Sites of Northern China

A RECORD OF FIELD WORK IN THE YEARS 1921—1924

By

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HISTORY OF RESEARCH.

In the year 1918 I began on behalf of the Geological Survey of China a systematic search for localities of Tertiary and Pleistocene mammals. Schlosser's work *Die fossilen Säugethiere Chinas*, Abhandl. der Königl. Bayerischen Akad. der Wissenschaften, Bd. 22, Abtheil. I. 1903, had afforded us—as far as species were concerned—a somewhat promising idea of the possibilities of Northern China in this line of research. But his material, being collected from the "dragon bone" supply of the native medicine shops, gave us a very fragmentary representation even of the most abundant types, and his monograph contained, for obvious reasons, no information whatsoever as to the sites from which the bone and teeth material was derived.

Our collecting campaign was organized under the auspices of the then director of the Geological Survey Dr. V. K. Ting. The necessary funds were raised in my home country, Sweden, thanks to an organization formed for the purpose, The Swedish China Research Committee. The ~~scientific~~ material thus obtained was to be handed to Professor Carl Wiman in Uppsala for scientific study, and the specimens were to be divided between Professor Wiman's institute and the museum of the Geological Survey of China.

In the early course of these collecting activities I turned my attention also to possibility of finding remains of early Man. The occurrence of a hominid tooth marked "*? Anthropoide g.n. et sp. ind.?*" in Schlosser's above-mentioned work evoked the hope of finding very ancient traces of fossil Man—a hope that has subsequently been fulfilled beyond all expectations through the *Sinanthropus* find at Chou K'ou Tien.

On the other hand, the researches carried out by Torii in Manchuria and Eastern Mongolia gave ample indications of Neolithic sites and their furniture.*

A young member of the field staff of the Geological Survey of China, Mr. T. O. Chu (朱庭祐), undertook in the summer of 1919 a reconnaissance in the western part of Southern Manchuria, East of Jehol. When he started upon this trip I asked him to make inquiries about stone implements, and he was very successful in bringing home numerous specimens, some of them very beautiful and remarkable, which he had obtained from the local population.

At this time nothing was known about stone implements from China proper, except for some few specimens ~~for~~ Shantung described by Laufer in his treatise on "Jade".†

The first finds of fossil mammals, both of the Pontian Hipparion fauna and from the loess, were made by me in December 1918 with the aid of Swedish missionaries in the Hsin An (新安) and Mien Chih (濉池) districts of Central Honan, south of the Yellow River.

Having been encouraged by Mr. Chu's above-mentioned finds in SW. Manchuria, I instructed my private collector Liu (劉秀昌), when he was despatched to continue the work in Honan in the autumn of 1920, likewise to inquire after stone implements. His search was rewarded with singular success. In one single village, Yang Shao Tsun (仰韶村), in Mien Chih Hsien (濉池縣), he gathered, with the aid of the villagers, several hundred stone implements, axes, adzes, hoes, knives etc., some of them of excellent quality.

It seemed evident that here was some indication of a considerable dwelling site. In May the following year, 1921, I had an opportunity of studying the fields of Yang Shao village, and my expectations were fulfilled far beyond my dreams, a site of unusual size and rich in artifacts being soon identified. This was the first prehistoric site discovered in China proper.

* Torii, R. & Torii, K.: *Etudes archéologiques et ethnologiques. Populations primitives de la Mongolie Orientale*, Tokyo 1914 (Journal of the College of Science, Imperial University of Tokyo, Vol. 36:4).

Torii, R.: *Etudes archéologiques et ethnologiques. Populations Préhistoriques de la Manchourie Méridionale*, Tokyo 1915 (Journal of the College of Science, Imperial University of Tokyo, Vol. 36:8).

† Laufer, B.: *Jade. A study in Chinese Archaeology and Religion*. Chicago 1912 (Field Museum of Nat. Hist., Publication 154, Anthropol. series, vol. 10.)

After I had reported to the Director of the Geological Survey on the existence at Yang Shao Tsun in Honan of a large site of Late Neolithic or *Æneolithic* age, it was decided to undertake a systematic survey and a partial excavation of this deposit. I was instructed by H. E. the Minister of Agriculture and Commerce to carry out this work with the assistance of [redacted] field staff of the Geological Survey, and the necessary arrangements were made with the provincial Government in Kaifeng (開封), for our protection during the stay at Yang Shao Tsun.

The site and its immediate surroundings, comprising the big ravines, were carefully surveyed by Mr. Yuan (map IV). He was also in charge of the business transactions of the exploration party and of the negotiations with the local authorities and the villagers. All these duties were performed with persistence, skill and tact, which saved us from several threatening causes of friction.

It is also a pleasure to me to acknowledge my indebtedness to my private collectors Liu (劉秀岩), Yao (姚忠和), Chen (陳恩普), Pai (白萬玉) and Chang (張澤川), all of whom actively and skilfully participated in the excavations.

Professor Davidson Black, of the Peking Union Medical College, visited us during three days in November, and his presence contributed very effectively to the success of our search for human skeletons. Unfortunately he was forced to return to Peking when a veritable graveyard had just come to light. Then Dr. Otto Zdansky, my very able palaeontologist collaborator, took in hand the continued excavation of the graveyard which had been uncovered by him and Dr. Black. This work was carried out by him with the greatest skill and a most careful determination of the exact position of every find (map XVIII).

The immediate result of the Yang Shao Tsun discovery was not only the addition to our knowledge of a rich find of autochthonous late Neolithic furniture, the ancestral inheritance of the local Protochinese population, but, intermingled with this, a painted pottery strongly reminding us of the *Æneolithic* painted ceramics of the Near East (Anau and Tripolje).

During our work at Yang Shao Tsun we heard of a nearby site at the village of Pu Chao Chai (不召寨), 10 li West from Yang Shao Tsun. Extensive and very valuable collections were made at this place by my Collector Chen. Personally I had only one single opportunity of visiting this site, so that my topographical notes are very meagre.

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After our survey of the Yang Shao Tsun site was completed on the 1st December 1921, I returned to Peking, but my Collector Yao (敬忠和), remained in Honan and succeeded in locating in Ho Yin Hsien (河陰縣), further east on the south side of the Yellow river, three sites, Chin Wang Chai (秦王寨), Niu K'ou Yü (牛口峪) and Chin Kou Chai (池溝寨), which are evidently of the same type as Yang Shao Tsun, though possibly slightly more recent, and have yielded a very rich and splendid harvest, specially of painted pottery. These sites were later visited by my collector Pai Wan Yü (白萬玉). Unfortunately I never had an opportunity of surveying these important sites but Pai at my request prepared from memory a sketch, which is here reproduced (Map II).

To return for a moment to the Mien Chih (滎池) area (Map II), during 1922 and the early part of 1923 my collector Chen (陳恩普), located two further sites, Hsi Chun Tsun (西春村), between Yang Shao Tsun and Mien Chih city and Yang Ho Tsun (陽河村), situated NW. of the said city. These two sites, which I have never visited, both resemble Pu Chao Chai in yielding only the coarse monochrome pottery but none of the fine painted ware that is characteristic of Yang Shao Tsun and the Ho Yin sites.

In the summer of 1921 I was sent by the Ministry of Agriculture and Commerce to examine some coal fields in the southwestern part of Fengtien (奉天) province, in the vicinity of Chin Hsien (錦縣). On the 10th June we arrived at Sha Kou T'un (沙鍋屯), the terminus of the Nu Erh Ho (女兒河) Sha Kou T'un (沙鍋屯) branch line of the Peking-Mukden railway, and in a small limestone cave we there discovered a deposit belonging to the late Neolithic. This cave filling was completely excavated and subsequently described in the Palaeontologia Sinica, Ser. D, Vol. I, Fasc. I. Together with implements of stone and bone and characteristic vessels of brownish-grey ware there were found some few painted sherds of Yang Shao type. The most striking feature of this site was the abundance of human bones deposited in complete disorder and the frequent occurrence of slender rings of stone and mussel shells, objects which indicate some ritual use. It seemed likely, though not proved, that some cult associated with human sacrifice was practised in this narrow cave.

Before proceeding to record the great prehistoric discoveries in Kansu, I should like to call attention to sundry finds of minor or imperfectly studied sites in Chihli (Hopei), Shansi and Shensi provinces.

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In Chihli I often noticed during my many excursions fragments of monochrome, for the most part brick-red pottery characterized by the abundance of large milky flakes of a mica-or talc-like mineral. On the left side of the Hun Ho (洹河), above Chin Chuang (金莊), in Wan Ping Hsien (宛平縣) I found upon small terraces, 35-37 meters above the river, pottery fragments and pieces of stone implements indicating that prehistoric Man occupied these terraces (page /). It should be noted that in spite of persistent search we never succeeded in finding painted Yang Shao pottery within the boundaries of Chihli province.

In the distant NW. of Shansi, in Pao Te Hsien (保德縣), on the Yellow river, my palaeontologist collaborator Dr. Otto Zdansky, when studying the richly fossiliferous Hipparion beds, noticed at Chi Chia Kou (冀家溝), sherds of typical Yang Shao ware.

When in the early part of 1926 H. R. H. the Crown Prince of Sweden announced his intention of visiting China during his tour round the world, it was naturally our strong desire to show him some of the Yang Shao sites in Honan, but owing to the disturbed conditions prevailing in that province we were forced to abandon this plan. I then thought it probable that a persistent search in any other of the loess areas of Northern China would reveal some hitherto unknown prehistoric sites. The province of Shansi, and specially the surroundings of Taiyuanfu, were then perfectly peaceful, and at Taiyuanfu we had in Professor Erik Nyström a sincere and trusted friend who had undertaken to act as the host and guide to the Crown Prince and his party. Under these circumstances I sent my collector Chuang to Taiyuanfu with instructions to try to locate some prehistoric sites not too far from the provincial capital.

The reconnaissance undertaken by Chuang was remarkably successful and resulted in locating the following five sites:

1: Chao Hsien (趙縣)

SE. 40 li

Tsao Chiao Tsun (皂角村).

Fragment of a stone axe and fragments of a polished and chipped mattock. Some few pieces of coarse grey pottery, but mostly reddish pottery with basket-and string-pattern. Some pieces of typical painted Yang Shao pottery.

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2: Chao Hsien (趙縣).

E. 2 li

Mo Tou Tsun (磨頭村).

NE. 2 li.

Some stone implements and coarse grey pottery.

3: Yang Chü Hsien (陽曲縣).

N. 30 li

Yang Chü Chen (陽曲鎮).

Stone and bone implements, coarse pottery.

4: Yang Chü Hsien (陽曲縣).

N. 45 li

Pei T'ai Ti (北塌地).

Same kind of finds as No 4.

5: Hun Yuan Hsien (渾源縣).

SW. 15 li

Li Yü Tsun (李峪村).

Stone and bone implements together with prehistoric pottery, some of it painted.

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Only two of these sites, namely Yang Chü Chen and Pei T'ai Ti were visited by me and some few topographical notes were taken down (page 10). Directly, these finds have not added very materially to our knowledge of the Yang Shao furniture, but the mere possibility of discovering in some few weeks of field reconnaissance five new prehistoric sites throws some very interesting light upon the apparent abundance of these sites of Yang Shao and Pu Chao Chai types in the loess areas of Northern China. There is no doubt that the fifty-odd sites which we have discovered in Fengtien, Honan, Shansi, Shensi and Kansu, are only a few scanty samples of the hundreds and hundreds actually existing all over the loess-covered land of Northern China.

In this connection it should be mentioned that before we sent Chuang to reconnoitre in central Shansi some young Chinese archaeologists headed by Dr. Li Chi (李濟), had already discovered in the Fen Ho valley of SW. Shansi, a very interesting site of Yang Shao type, which has been preliminarily described by Ssu Yung Liang: *New stone age pottery from the prehistoric site at Hsi-Yin Tsun,*

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Shansi, China, (Memoirs of the American Anthropological Association, Number 37), Menasha, Wis., U.S.A., 1930.

On the repeated visits in the years 1910-1921 of my collector Chang (張濟川), to Pao Te Hsien in NW. Shansi in order to collect the fossils of the Hipparion clay, he heard of the occurrence of stone implements and painted pottery at Wu Lan Kou (五蘭溝), in Fu Kou Hsien (府谷縣), of Northern Shensi, just opposite to Pao Te Hsien (保德縣), on the west side of the Huang Ho. A small collection of these relics brought home by Chang has given us not only the largest stone axe ever found in China but also painted ceramics of a definite type, never encountered in any other Chinese site.

In 1922, when accompanying Dr. Zdansky on his fossil collecting expedition to Ching Yang Hsien (慶陽縣), of Eastern Kansu, the above mentioned collector Chang discovered a site of Yang Shao age at Shih Li P'u (十里鋪), ten li east of the provincial capital of Shensi. (Page 150). On their way to Kansu, in the spring of 1923 my men made some further collections on that site. How

It now remains to record the manner in which we discovered numerous very rich prehistoric sites in Kansu and the adjoining tracts of Inner Mongolia and Tibet.

150 The discovery of the painted pottery in the Yang Shao sites of Honan invited comparisons with the similar ware of the Near East Aeneolithic cultures, especially the painted vases of the Tripolje sites of Southern Russia. Assuming that there actually existed a consanguinity between these two main groups of painted pottery, that of the Near East and that of Honan, it seemed very likely that the one time connection between the Near and the Far East would be found in that distant south-western corner of China proper where the province Kansu borders on the one side upon Western Mongolia on the other upon Tibet.

It was upon this assumption that I based my plans for the long journey which I undertook in 1923-24 to this northwestern back-block. Together with Mr. P. L. Yuan, my good friend from the days of Yang Shao Tsun excavations, and my own Chinese collectors I left Peking on the 7th May, 1923, travelling by rail to Kuan Yin T'ang (觀音堂), the then terminus of the Lung-Hai (隴海), railway in Honan. From there we proceeded by mule carts along the main road leading westwards to Sianfu and thence to Lanchow. It was when route before reaching Sian that some of my men made a second collection at Shih Li P'u as mentioned above. Pen

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All along the route from Sianfu past P'ingliang to Lanchow we were very keenly on the lookout for prehistoric sites. Grey pottery of the type recognized as Han or other very early dynasties was seen in a few places, but, in spite of all our reconnoitring and inquiries, no trace of prehistoric pottery was discovered anywhere along the Kansu main road. We had travelled nearly all the way from Lanchow to Sining when finally, only ten li before this city, at another Shih Li P'u (十里舖), one of my collectors/Chuang/ noticed, in the cliff bank of a small brook crossed by the road, the characteristic ashy earth which we so well knew from the Yang Shao Tsun site. It was on the 2nd July that Chuang made this remarkable discovery, the first find of prehistoric painted pottery in Kansu. After a rapid survey of the site, sufficient only to prove its being approximately of Yang Shao age, we went on to Hsining (西寧), but after a few days' stay in that town we returned to Shih Li P'u (十里舖) and stayed there for more than a week, carrying out the survey and collecting work that is recorded on pages/

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The 21st July we started from Hsining on our way to Kokonor. When travelling westwards on the north side of the Hsining Ho I noticed 23 li (13 km) from Hsining, at a place marked in my diary as Ma Pao Cha, in a low loess-cliff close to an irrigation canal, "pockets" of ashy earth. In these pockets I collected some fragments of pottery that appeared to be of a prehistoric type. As we shall see, this observation later on gave rise to a very important discovery.

Having arrived at Tangar, the last Chinese small city, on the 23rd July and there made our last preparations for Kokonor, we started again on the 25th and reached Kokonor on the following day through a low, open mountain pass. We made our temporary camp at a small brook in a tract full of sand-dunes, which seemed to extend towards the southeastern end of the lake. Among these dunes we found some fragments of reddish pottery of a prehistoric type.

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From our third camp, when marching westwards on the north side of Kokonor, I noticed some kilometres away, at the edge of the coastal plain towards the hills, a small dune landscape and rode there to reconnoitre. To my great delight I found here at the surface very numerous chippings of flintlike stone and also stratified deposits with artifacts including genuine painted Yang Shao pottery. (Loc. 34, page 183-84).

During our journey round Kokonor fragments of prehistoric pottery were seen in several places, but it was only when we had nearly circumscribed the lake

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185-2 that we found on the 8th August at camp XII, very interesting traces of a prehistoric settlement overlaid with structures from historical times. (P. /).

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15 On the 14th August we had left the rolling grasslands of Tibet and descended into the thousand-metres deep canyon through which the Huang Ho passes in the Kueite section. At the first settlement named in Tibetan Gomi Tanju or in Chinese Lo Han T'ang (羅漢堂), upon the edge of the river terrace, my collector Chen found potsherds and a fragmentary stone knife, and subsequently a small culture deposit was excavated here.

Two days later Chen heard from a local Tibetan of a pottery place upon the other side of the valley. A reconnaissance proved this to be a very rich and interesting deposit, which we excavated and surveyed during two periods the 17th August and the 28th August—9th September (P. /). (98-101)

During our stay in Kueite Hsien we found three further prehistoric sites, all of them of minor importance viz. Ho Chia Ssu (何家寺), on the north bank of the Huang Ho, Wen Ch'ang Miao (文昌廟), and Kung Pai (宮白), on the south side of the river (P. /). 1102-103

1a On the 15th September we were back in Hsining from Kokonor and the Kueite canyon region. I now had to stay some time in the city in order to write my reports and pack my collections. During this time I sent some of my men to reconnoitre on the northern side of the Hsining Ho in the area mentioned above as Ma Pao Cha, where I had seen some potsherds when starting for Kokonor in July. At the place just mentioned my collectors found nothing of real importance but, upon extending their search further west, they located at Chu Chia Chai (朱家寨), a site of Yang Shao type, which looked very promising. Here we spent most of October and located not only a rich dwelling-site but also the corresponding burial site. (P. /). 152-70

During our survey of the large Chu Chia Chai site one of my men, when reconnoitring further north, located at Ch'ia Yao (卡腰) and Hsia Hsi Ho (下西河), two sites representing a Bronze Age stage, which we marked in map III with the name Ssu Wa, but which we now prefer to name Ch'ia Yao (卡腰), as they have little or nothing in common with the Ssu Wa site of the Tao Ho valley.

In the early part of November heavy frost set in which prevented all further digging. For this reason I made up my mind to spend the winter in Lanchow, where

we arrived in the second half of November. Here I went into the local antique shops and inquired after painted pottery of the type found in the burial place of Chua Chia Chai in Hsining Hsien. However response was entirely negative.

In Lanchow there resided at this time a British missionary, the Rev. George Findlay Andrew, who was widely known among both Chinese and Mohammedans and who knew the province well. One day he invited me to see an urn which had been offered him by a private Chinese collector. It at once became clear that this specimen belonged to the same cultural group as the urns excavated at Chu Chia Chai. But it was much larger and above all much more gorgeously and beautifully painted than anything we had expected to find in those regions. A few days later I was offered, through the kind mediation of Mr. Andrew, four more urns, all larger and in part more gorgeously painted than the first one. Thanks to the tact and discretion of Mr. Andrew these five urns soon became our property at a price which under the circumstances was not extravagant. The possession of these large and beautiful urns offered the promise not only of further finds of the same kind but also of the existence of sites, probably burial places, even more rich and splendid than the one at Chu Chia Chai. Since I had made it known that I was interested in finds of this kind, the local curio dealers offered me some more specimens, some of them thickly covered with dust and some kind of varnish indicating that the specimen had long been kept in a local farm house. As long as my demand for these objects exceeded the scanty supply, prices soared high. Naturally I was very anxious to find out where these large and splendid urns came from, but it was equally evident that the dealers were anything but willing to give away their secret. However, towards the end of March the inflow of the large painted urns became so abundant that the prices automatically went down, and large numbers of inferior specimens were rejected. Then, with one of my Chinese collectors, Chuang, as intermediary, I made fresh inquiries among the dealers. As a result Chuang was sent out for a week's reconnoitring and returned not only with a rich harvest of beautiful urns but also with full knowledge of a number of important sites. He reported that he had travelled more than two hundred li in a southerly direction up the T'ao Ho Valley to the vicinity of Titao Hsien city (狄通縣), a region inhabited mostly by Mohammedans. Here he had been given the opportunity of seeing the grave-fields from which the majority of our large

and beautiful mortuary urns had been excavated. He had also visited a site with graves containing mortuary urns of quite a different type, which we later found to belong to the early Bronze Age (Hsin Tien stage). I now made preparations to leave Lanchow for several months, and on the 23rd April we started for the T'ao Ho valley.

Our first station in this beautiful and fertile valley was at Hsin Tien ~~in~~ in T'ao Sha Hsien (洮沙縣). Here we found not only a rich grave-field of the Hsin Tien stage, but also dwelling-site deposits of the Yang Shao and of the still earlier Ch'i Chia P'ing stages. This area was very carefully surveyed by my collaborator Mr. P. L. Yuan (Map XII).

Twenty li N. of Hsin Tien we had located, close to the north of the village of Sha Leng Tzu (沙楞子), a rich dwelling-site of the Hsin Tien stage which we named Hui Tsui (匯水). This place was surveyed by me (Map XIII). When some of my men were digging in the sites of Hsin Tien (新店), another party excavated in the Hui Tsui site, and I rode from one place to the other surveying and inspecting the finds.

At the end of the topographical survey of the Hui Tsui site I was unfortunate enough to be bitten by a dog, and while my wound was healing I was not able to move about. Very fortunately one of my men, the Korean Li, proved to be capable of making simple plans of the excavated graves in a site named Ssu Shih Ting (四時亭), a graveyard belonging to an early part of the Hsin Tien period.

When we had finished with the sites in T'ao Sha Hsien we moved further up the river to P'ai Tzu P'ing (排子坪), where we found some graves of Yang Shao mortuary type. At Tung P'ing (東平), closed by the T'ao Ho (洮河), we made some dwelling-site finds, also of Yang Shao type.

But by far the most important site in this area was the Ch'i Chia P'ing (齊家坪) dwelling-site; this became the type locality of the prehistoric stage which, in spite of the remarkably advanced pottery, must be interpreted as the earliest of the prehistoric stages discovered by me in Kansu. Map XIV gives a sketch of the Ch'i Chia P'ing site.

From P'ai Tzu P'ing we climbed on the 6th of June to Pan Shan (盤山), a group of grave-fields located on the hills overlooking the T'ao valley. These were the burial grounds which had yielded the majority of the large beautiful urns that had been offered to me in Lanchow in the spring. The local population had long

before my arrival dug through all these burial sites, and little remained for me to do in the way of excavating untouched graves. Only one single grave, quite untouched and containing rich furnishings, was I able to excavate, at Pien Chia Kou (邊家溝). For the rest, I had to content myself with a general survey of the region and a small excavation on a rather insignificant site at Yuan Tsui (園嘴).

My mafoo Chin (馬士貴) had been very successful in locating at Ma Chia Yao (馬家峽), near the western bank of the T'ao Ho (洮河), 13 km. S. of Ti Tao, a very rich dwelling site of the Yang Shao age. Some 8 km. further SSW we found at Ssu Wa Shan (寺窪山) a burial site which became the type locality of a stage of the Bronze Age probably following the Hsin Tien stage.

During 1923, our first summer in Kansu, my collaborator P. L. Yuan went north from Lanchow, for geological researches in the coal-fields of the Liangchow area at the same time as I made my trip to Kokonor and Kueite. I took advantage of this opportunity to send with Mr. Yuan my collector Pai (白蘭玉) to make inquiries after prehistoric sites. Pai was singularly fortunate. Rumours of finds out in the borderland of the Gobi desert brought him out to the great and fertile Chen Fan (鎮番) oasis, where he discovered at Sha Ching (沙井), just outside the oasis area, a number of sites, both a walled-in dwelling site and gravefields containing very advanced bronzes etc. of the type that we now name Ordos bronzes; and these bronze finds were associated with a very remarkable pottery with painted geometrical designs. These sites, which we name the Sha Ching stage, can hardly be much older than 500 B. C. and form by far the most recent of the cultural stages discovered by us in Kansu.

After we had completed, in the early part of the summer of 1924, the survey of the sites in the T'ao Ho valley, I went to the Chen Fan area and during August undertook a survey not only of the Sha Ching sites found by Pai in the previous year but also of a walled-in site of the Sha Ching stage at a place named San Chio Ch'êng (三角城) in Yung Ch'ang Hsien (永昌城). At this latter place I also had the good fortune to discover a much older site of very late Yang Shao or possibly Ma Chang age. Alas, the find was made only some few hours before we were forced to terminate our excavations, and under these circumstances we could only gather some surface finds from this remarkable site. On the 10th September we left Chen Fan for Lanchow in order to arrange our passage by raft down the Huang Ho in time before the river became ice-bound.

During the time I spent in the Chen Fan area I had sent my collector Chuang to investigate some reported sites in Nien Po Hsien (縣伯縣) at the Hsining Ho (西寧河). On my return to Lanchow he showed me some very interesting material which he stated had come from the area in question, and he even made quite definite statements as to the association of finds in the graves which he reported as having been excavated by him. Much later, during the preparation of the material in Stockholm, grave doubts were thrown upon Chuang's statements. From the beginning it had struck us that the potsherds from the reported site Ma Chang Yen 2 were in every way like the material from the large and rich site Ma Chia Yao in the T'ao Ho valley. One day our technician Mr. Gustafsson discovered that some sherds reported by Chuang to have come from Ma Chang Yen 2 fitted exactly with sherds which indubitably had been excavated at Ma Chia Yao. There is left to us then, no other explanation than that Chuang, who otherwise had proved to be a very hard-working and reliable servant, had succumbed to the temptation of showing up a rich material from a new locality. We must assume therefore, that he went back to the T'ao valley and made from the inexhaustible deposit of Ma Chia Yao a further collection, which he showed to me as having come from Ma Chang Yen 2 in the Hsining Ho valley.

We cannot help admitting that grave doubts must also be attached to Chuang's reported grave finds from Nien Po Hsien (縣伯縣) and Hsining Hsien (西寧縣). Nevertheless in pag. I have reproduced his rough sketches for what they are worth, but it goes without saying that they should be studied and discussed with extreme caution.

I wish to take this opportunity of presenting my thanks to all those in widely different positions who by their help and support made it possible for me to carry to a happy conclusion these extensive excavations, which on some occasions were by no means free from danger and difficulty.

Foremost among all my friends I feel it my pleasant duty to mention the two directors of the Geological Survey of China, Dr. V. K. Ting and Dr. Wong Wen Hao, who by their careful and farsighted planning and by their unfailing support gave me the opportunity to carry out this very fascinating research.

The whole scientific organization, under the protection of which we worked, was a child of Dr. Ting's constructive genius. In particular the publication *Palaeontologia Sinica* was one of his most noteworthy creations. As the work developed both in the field and in the laboratory he was always ready to meet new demands and to devise means of overcoming serious obstacles.

Now he has for ever left us. His premature death is an incalculable loss to his own people and a cause of grief and mourning among his numerous friends in distant lands. In humble homage to a leader and a friend, as admirable in his sweeping criticism as in his everlasting fidelity, the author of this report on archaeological field work has dedicated it to his memory.

Now that the founder of the Geological Survey of China is no more, it is a great relief to know that the destiny of the Survey is in the able and industrious hands of Dr. Ting's intimate friend/Dr. Wong Wen Hao. When I undertook my eighteen months' journey to Kansu/Dr. Wong was already in office as Director of the Survey, and it was always to him that I had to address my petitions for assistance in many a trying and anxious situation. He was always ready to help, and his aid was always fully effective. I ask Dr. Wong kindly to accept these expressions of my deep gratitude and high esteem.

I also wish to extend special thanks to my collaborator and friend Mr. P. L. Yuan, who in Kansu as well as in Honan smoothed the way for me by his tactful and efficient intercourse with the provincial officials, and who prepared the beautiful maps of the Yang Shao Tsun site and of the Hsin Tien area.

During my field work in Honan I had the benefit of the help of several Swedish missionaries, foremost among them the Rev. Miss Maria Pettersson, of Hsin An Hsien.

The financial burden incurred by my extensive archaeological field work was borne by the Swedish China Research Committee, formed in 1919 by Dr. Axel Lagrelus for the purpose of supporting this palaeontological and archaeological collecting campaign. In the year 1921 H. R. H. The Crown Prince of Sweden graciously consented upon Dr. Lagrelus' respectful petition to accept the position of Chairman of the Committee with Dr. Lagrelus as executive member and treasurer. To H. R. H. The Crown Prince and to Dr. Lagrelus, who by their unflinching help made this enterprise possible, I wish to present the respectful expression of my profound gratitude.

The Rev. George Finlay Andrew, a resident missionary of Lanchow at the time of my stay there, helped me very substantially by negotiating for me the purchase of the first large mortuary urns of the type that was later named Pan Shan. He also undertook for us a very successful reconnaissance trip from Lanchow to Chin Chou.

Mr. N. B. Doodha, Postal Commissioner of Lanchow, offered me quite unparalleled help in negotiating with the provincial authorities for the release of my collections. I am glad to have this opportunity of extending my sincere thanks to Mr. Andrew and to Mr. Doodha.

Last but not least, I wish to place on record my feelings of gratitude towards my servants and collectors Liu (劉秀岩), Yao (姚忠和), Chen (陳恩普), Pai (白萬玉), Chin (靳士貴), Chuang (莊永成), and Li (李衡浩). Even in the face of such a default as that recorded above with reference to one of them, I still feel that, as a whole, they all served me faithfully and diligently.

Before I go on to describe in detail my finds and excavations, it may be desirable briefly to explain how I worked together with my private Chinese assistants.

I have often been asked how it was possible in the brief space of four years to locate half a hundred prehistoric sites of types which were entirely unknown until in the spring of 1921 we made the initial discovery at Yang Shao Tsun. The reply is to be given along two different lines.

Firstly, I undertook with the aid of my men very extensive local inquiries among the villagers wherever we travelled, and in this way many important sites were made known to us. Secondly, I soon discovered that the prehistoric dwellers in Honan and Kansu had chosen their habitations along certain conspicuous topographical lines, in Kansu actually to such an extent that we are justified in naming the prehistoric people of Kansu terrace-dwellers.

As soon as this association of the prehistoric sites with the border of the Malan terraces had become clear to me, we had simply to follow the terraces in our search for new sites.

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When once a rich site or, better still a group of sites had been located, I organized the work in such a way that some of my men were sent to dig in a rich dwelling-site, while two or three of my private assistants under my continuous supervision excavated the burial-places. Most of my own time was occupied in surveying maps of the various sites in scales varying from 1:25,000 to 1:500 as well as plans of the individual graves on the scale 1:10/published on the scale 1:20. Furthermore I had to undertake personally all difficult and critical excavations, especially within the burial-grounds.

As a result of this method of work the graves were far more exactly recorded than was possible in the case of the dwelling-sites. In a few cases, specially at Yang Shao Tsun and Hsin Tien I made testpits, within which the contents of successive layers were carefully recorded and horizontal as well as vertical coordinates given for each more important find. However, it soon became clear to me that under the existing conditions such a method of excavation was very tedious and would yield poor results.

When working in the dwelling-sites we repeatedly came across objects from late historical periods in soil that we had expected to be an undisturbed prehistoric deposit. For instance we found at Yang Shao Tsun a sherd of glazed Sung-pottery at a depth of more than one meter. In the Chu Chia Chai burial-site of Kansu (late Yang Shao age) we also found a sherd of glazed pottery at a depth of. Finally, in the Hui Tsui dwelling-site of Kansu (Hsien age) we discovered a Wu Shu Han coin at a depth of 0.8 m.

It is quite easy to explain these intrusions into sediments which otherwise contained only artifacts of the late Neolithic or the early Bronze Age. The process by means of which these modern objects have been absorbed into the prehistoric cultural sediments has undoubtedly been the dislocation of soil at the hand of the farmers. It is widely known that nearly all agriculture in China is based upon the levelling of the slopes into a series of narrow terraces. Fig. 1, gives an idea of how these terraces are built in such a way that undisturbed and removed soils are to be found nearly everywhere side by side. This dislocation and mixing of soil at the hand of the farmers would not have formed such a terrible menace to the archaeologist but for the additional fact that as a rule the loess soil/huang t'u/is entirely unstratified. Consequently we often believed that we were working in an undisturbed ancient deposit until a Sung-sherd or a Han-coin proved that such was not the case.

Under these circumstances I was soon forced to leave my men to dig freely within a given site. During my survey work I visited these excavating parties once a day or every second or third day, if they were working some distance away. Such a method of excavation is not scientific, but it was the only way of collecting a large body of material from a great many sites within the very brief space of time accorded to me. As a reconnaissance survey of a sequence of entirely unknown cultures this collecting work has certainly served its purpose.

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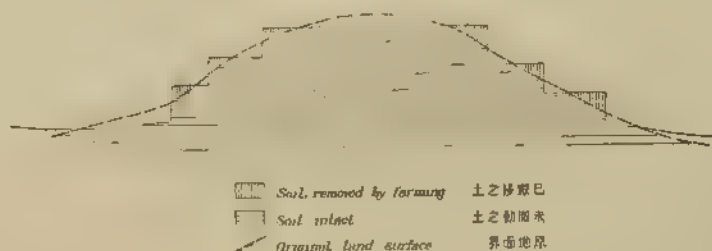


Fig. 1.

It should not be forgotten that this lack of scientific accuracy is confined to the work within the dwelling-sites. The burial-grounds, even such a dislocated site as the Chu Chia Chai cemetery, were excavated under strict observance of measuring horizontal and vertical coordinates in the case of all the finds, as will be shown in the detailed descriptions of the individual sites.

The reader of this volume will soon realize that it contains not only the records of our excavations, but in addition brief chapters attempting to outline the general topographical features of the provinces in which we conducted our collecting campaigns. To me, as being originally a student of geology and of physical geography, it was tempting to try to investigate the relationship of the prehistoric settlements to the geography and, more generally, to the natural history of the different regions. In this way it soon became evident that the valley cultures of Honan and Kansu were very intimately associated with the Malan terraces of those valleys. Furthermore it was proved that in Honan, at any rate at Yang Shao Tsun, the erosion was later than the site, whereas in Kansu, in the Kueite basin as well as in the Tao valley, the ancient settlements were built in much the same topographical setting as we are studying today.

THE SITE OF YANG SHAO TSUN

In the introductory chapter on the history of our field research I have related how we found the first prehistoric village at Yang Shao Tsun in Mien Hsien of Honan province. My first impression of this site, which later proved to be of such fundamental importance, was obtained on April 18th 1921, when I went there because of the numerous and beautiful stone implements found by my collector Liu in the late autumn of the previous year.

The said day of April 1921 I wandered from the town of Mien Chih along the 8 km. road northwards to Yang Shao Tsun with the purpose of discovering the site from which Liu's abundant finds of Stone Age implements had been derived.

About 1 km. south of the village of Yang Shao Tsun I had to traverse a very great ravine, a real miniature canyon, which was subsequently found to form a very notable feature of our topographical survey of the district. When I had reached the northern side of the ravine I saw in the side of a gulley a very interesting section. At the bottom the red Tertiary clay is exposed, and it is with a distinct contact overlaid by a peculiar loose soil, full of ashes and containing fragments of pottery. It seemed not improbable that this might be the deposit from which the Stone Age implements had been derived. After some minutes' search I found at the very bottom of the deposit a small piece of fine red ware with black painting on a beautifully polished surface. At that time I knew nothing of the fine ceramics with black painting on a red ground which were found by Pumpelly's expeditions of 1903 and 1904 at Anau in Russian Turkestan, and equally little of similar polychrome vessels of the late Neolithic and Aeneolithic finds in South-eastern Europe, and it therefore seemed to me inconceivable that such clay vessels could be found together with stone implements.

Somewhat dejected I felt that I had followed a track which would only lead me astray, and I thought it safer to return to my geological-palaeontological research. I was at that time especially interested in the large eggs of the prehistoric ostrich, of which several specimens had come into my hands, but of which the geological age was not yet clear.

I now returned, on April 19th, to the study of this problem and succeeded in personally excavating one of these eggs from a genuine loess deposit, so that the question of the age of the Asiatic ostrich was finally settled.

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Meanwhile, I lay in the evenings and reflected on the Yang Shao Tsun riddle. I had by accident taken up my quarters just in that village. For a few pence the boys of the village constantly gave me new stone axes which they had found in the fields, and I myself made similar finds. On the other hand almost everywhere in the walls of the ravine south of the village I could see thick deposits of the same ashy soil in which I had found the fine painted fragment of a bowl on the first day.

I decided to devote a whole day to a search in these ravine walls in order to clear up the question of the relation between the stone implements and the painted ceramics. After a few hour's search I extracted from the untouched ashy soil a fine example of a stone adze. During the course of the day I made other interesting discoveries, and it soon became clear that we here had to do with a deposit of unusual magnitude, rich in artifacts, especially fragments of pots including the fine, polished, polychrome ware to which I have referred above.

This time I could not undertake any detailed investigation of the new dwelling places. I had not the necessary official support for such a comprehensive task, and I had, moreover, on this occasion, important geological and paleontological work awaiting me.

On my return to Peking I had the great good fortune to find in the library of the Geological Survey the three splendid volumes in which the discoveries of the Pumpelly expedition in Anau in Russian Turkestan were described. I found in them coloured illustrations of fragments of vessels with paintings which reminded me very much of the fragments which I had found at Yang Shao Tsun.

1.1A In the autumn of the same year I was accorded permission by the Government to undertake larger scale excavations at Yang Shao Tsun. I was accompanied by Mr. P. L. Yuan of the Geological Survey and by my Chinese assistants I arrived at Yang Shao Tsun on October 27th, and our excavations continued until December 1st.

Before I proceed to a description of the prehistoric dwellings it may be appropriate by way of orientation to give an account of the topographical conditions and to name some of the principal localities.

Mien Chih Hsien, the district in which Yang Shao Tsun is situated, lies on the great and ancient highway between Lagan, in the east and Szechuan in the west,

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2. *circumstance deserving of notice.*

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the two foci of the dynastic and cultural life of the Chou and Han dynasties. The open situation of the place beside the chief artery of the early historical periods is a ~~feature that makes some observations upon the modern village~~

The town of Mien Chih, which is one of the stations on the Lunghai railway, 中 lies in an east west valley, from which the land north and south rises by gradually 華 sloping plateaux, consisting of red Tertiary clay, covered by loess. These plateaux 民 are intersected by numerous ravines, about 30-50 metres deep, running into the 月 Mien Chih valley. 廿

In the blue distance to the south rises a mountain wall belonging to the great 七 Tsin Ling Shan range, and similarly to the north we find mountainous country 月 which separates the Mien Chih valley from the deeply cut, cliff-bound channel of the 廿 Yellow River far away to the north. In that direction we see the first limestone hills about 3 km. north of our destination, the village of Yang Shao Tsun. 交

If one walks northwards from Mien Chih towards Yang Shao Tsun, one sees on both sides of the road the deep ravines which run southwards into the Mien Chih valley. In the walls of these ravines one obtains a glimpse of the structure of the Tertiary and Pleistocene strata, below, the red clay of Pliocene age and, above these clay beds, the yellow loess soil. It was in these ravines that, during one of our previous visits, we made a number of discoveries which essentially revealed the later geological history of this district; in the red clay a hitherto unknown horse, *Proboscideipparion*, and in the loess Asia's extinct ostrich, *Struthiolithus*.

If the district is thus rich in geological relics it is not less so in respect of the early historical periods. One will often find here burial urns and bronzes of the Han dynasty, and from one tomb of this period in a neighbouring village north of Yang Shao Tsun we were shown no less than twenty-four clay vessels and one bronze dish. The architectural monuments of later times are visible on the limestone hills to the north, where a temple and two ancient fortifications testify at once to peaceful contemplation and dangerous times of unrest.

The traditional ancestor worship of the people is visible in the beautifully carved monuments to local celebrities which flank the road and give an impression of piety and sanctity to the fertile, well-cultivated countryside. One may therefore with justice say that it would be difficult to imagine a setting richer in early monuments, in the widest sense, for the imposing prehistoric remains, which we

will now more closely examine. On the other hand the discovery of this great site of Stone Age dwellings will link up in time the more remote geological discoveries with historical periods as the oldest monument, so far as we at present know, of human activity in these parts.

The modern village of Yang Shao Tsun lies in the narrow apex between the inmost parts of two ravines, Hsi Kou and Tung Kou (Map IV). The central part of the village is situated on top of the loess plateau and consists of detached brick houses, but both by Tung Kou and on the edge of Hsi Kou there are houses of a quite different type, loess caves dug into the side of the ravine. A very small part of the village, in a sense a small village to itself, lies far down to the south inside Tung Kou. Some abandoned caves on the peninsula, which was formed by the confluence of Tung Kou and Hsi Kou, show that some dwellings, Hsi Tzu Kou (Loc. IX), once existed here beside a small temple.

Life in this small agricultural community moves in the uniform regular rhythm of century-old custom. Life is still very simple and existence is hard. Interest is therefore centred in material things and the maintenance of life directs activity predominantly to the cultivation of the fertile loess soil.

The most fatally incalculable factor of the seasons is the rainfall. Since reckless felling has destroyed the last remnants of the primeval forests which, by the evidence of the Stone Age deposits, once covered the land, the treeless loess plain has become exceptionally sensitive to changes in the rainfall. If the normally light rainfall fails, there is no reserve of moisture in the plateau, which is drained by innumerable ravines. If on the other hand the summer rains come with the violence of a cloudburst, as not infrequently happens, the ravines are widened with catastrophic rapidity. New miniature ravines are formed in a single night of rain, houses are threatened and roads are diverted. Most feared is a drought, which is synonymous with starvation.

Quite naturally many of the domestic utensils of these peasants bear the stamp of antiquity. The more we become familiar with these simple implements, the clearer it becomes that many of them go back to prototypes of prehistoric times. But most of the life of the modern Honan peasant points to degeneration, and these simple men have no idea that the pieces of vessels in the walls of their ravines speak of a prehistoric ceramic art which nowhere reached more profusely than

during the Yang Shao civilization, and which in the history of the ceramics of China was not succeeded by a similar artistic high standard until the Sung dynasty.

The prehistoric cultural deposits at Yang Shao Tsun lie to the south of the modern village, on the detached piece of the loess plateau which is enclosed between Tung Kou and H i Kou, the two great ravines. On the whole, therefore, the ravines constitute a frame round it. But there exists a small area of cultural deposits outside this frame, just where the road to Mien Chih leaves the confluence of the ravines, near a small village named Tung Tzu Kou. Here where the road from Mien Chih to Yang Shao Tsun descends into the ravine I found three deep pockets (see below) with charcoal and abundant pottery.

On the other hand, directly south of the modern village, there are considerable barren areas. But within the southern half or more of the island between the ravines almost every square yard reveals cultural deposits varying between 1 and 5 metres thick, with an average of about 3 metres. The extent of the site within the main ravines is approximately indicated by the numbered digging places I-XVII, shown in map IV. In a north-south direction the length of the old village area is more than 600 m., with a breadth from east to west of about 500 m. ~~We have calculated the area of the culture deposit to be approximately square metres.~~

DESCRIPTION OF NUMBERED EXCAVATION SPOTS WITHIN THE YANG SHAO SITE.

I. 500 m. S to E from the main village and 170 m. E of the ravine road, at the place marked I, ~~Chuang~~ and I found on the 31st October a spot containing culture earth, which was already exhausted during the following day. The deposit was here only 0.5-0.6 m. thick and it formed a round spot, 2.8 m. in diameter. This spot, where two nearly complete Li tripods and other large fragments of monochrome vessels were found, did not yield a single fragment of the fine painted ware.

II. Just E of the ravine road and opposite to the 97 metre of the ravine-road section (Map VI) we started on the 1st Nov. a section running east-west. The western end of the trench was only 4.5 m. east of the eastern side of the road ravine. The length of the trench was 20 m., but only a part in the eastern half (see fig. 2).

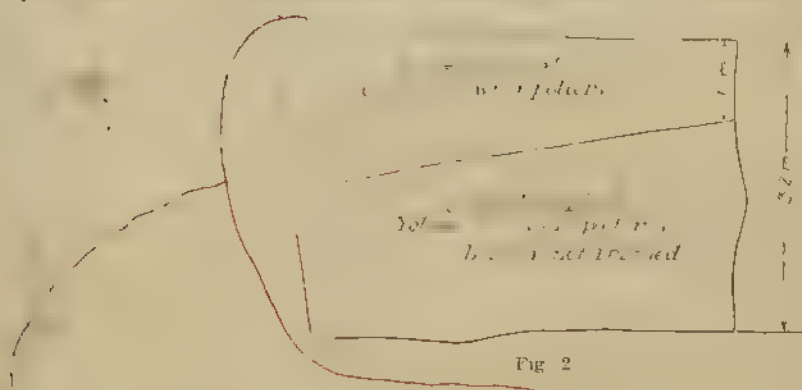


Fig. 2

was dug down to a maximum depth of 3.2 m. In this part of the section there was, on the top, 1-1.5 m. of grey earth containing pottery, and below this 1.7-2.1 m. of yellow earth also containing pottery. The bottom of the culture stratum was never reached in this trench. The distribution of the finds will be recorded in the description of the artifacts.

III. A trench not far N from II and close to the east of the road-ravine. The trench, was approx. 10 m. long, ran in the direction N 10° E/S 10° W. The maximum depth was 1.6 m., out of which the upper 1.2-1.3 m. consists of greyish-brown impure caliche soil. In the bottom was 0.3-0.4 m. of red clay with small concretions of lime.

IV. This locality is situated in the strongly dissected eastern part of the site, 80 m. north of the road Koa in the name of the eastern ravine. (Map IV). Pl. XIII: 2 gives a very clear idea of the topographical features of this spot. Upon a narrow ridge left by the ravine, when we noticed a remarkable shaft dug vertically into the loess and filled with caliche soil. This shaft was carefully excavated by Dr. Zdansky, and Pl. XVII shows the place during the final stage of the excavation. Figure 3 in the text gives the corresponding vertical section. The dotted line marks the bottom, which is not visible in the photograph.

The maximum height of the shaft wall is 5.4 m. Max. diameter 1.85 m. Diameter in two directions at the bottom 0.97 and 1.09 m. Height of the lowest surviving part of the wall 1.1 m. In the lower part of the shaft up to 2.7 m. from the bottom the filling of the shaft is composed of strata of alternating layers, some cm. thick, of caliche and loess. The most common in the

was

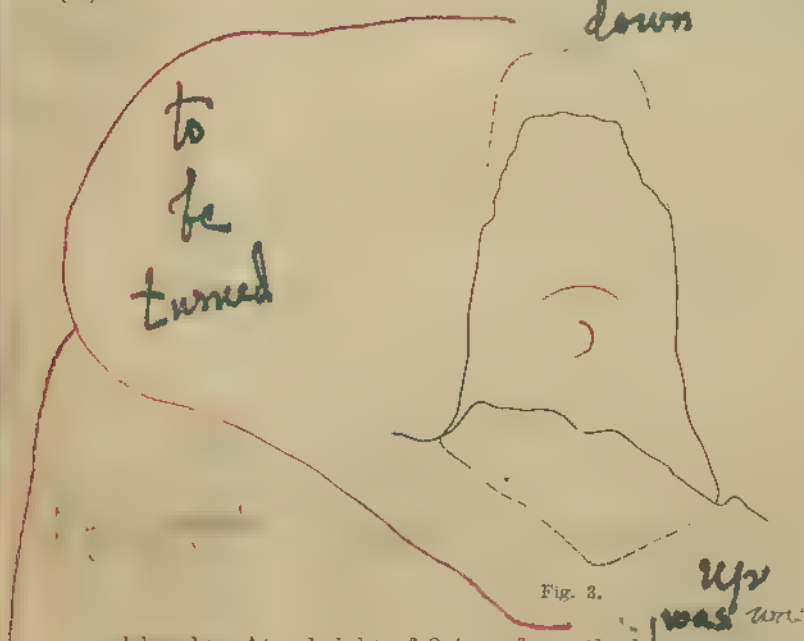


Fig. 3.

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gravel lands. At a height of 2.4 m. from the bottom numerous plant impressions in the sediment. The upper part of the filling ~~is~~ almost entirely unstratified.

V. Two skeletons near N of I and close by the eastern wall of the ravine road. At a shallow depth beneath the surface of the soil two skeletons (A and B) were discovered. Dr. Zdansky, who excavated them, gave the following report: Grab mit zwei Skeletten (A und B). Beide Skelette ausgestreckt in Rückenlage. Die linke Hand des oberen Skelettes (A) auf dem linken Oberschenkel, die rechte neben dem Becken. Kopf gegen SW. 15° S gewendet. Das obere Skelet deckt das untere so, dass der rechte Arm des unteren 10 cm. neben dem rechten Arm des oberen zu sehen war und der Kopf des unteren sich etwa 15 m. hinter dem des oberen befand. Auf Artefakten fanden sich außer zwei roten Tonscherben, ein Bruchstück eines Ringes von kreisrundem Querschnitt sowie ein Knochensplitter von der ungefähren Form einer Pfeilspitze, die aber beide viel höher als die Skelette gefunden wurden, und offenbar nicht mit ihnen zusammengehören. In unmittelbarer Nähe des oberen Skelettes an den rechteckigen Tonscherben ober dem rechten Handgelenk ein Stück Quarzit von halbkreisförmigem Umriss, über den Fingerspitzen der rechten Hand eine teirame runde Flussschale. Auf dem Hals ein Bruchstück einer Schmuckring und ein kleiner Knochenstück und am Hals schräg von

rechts vorn unten nach links hinten oben ein flacher beinerner Spatel mit parallelen Langseiten.

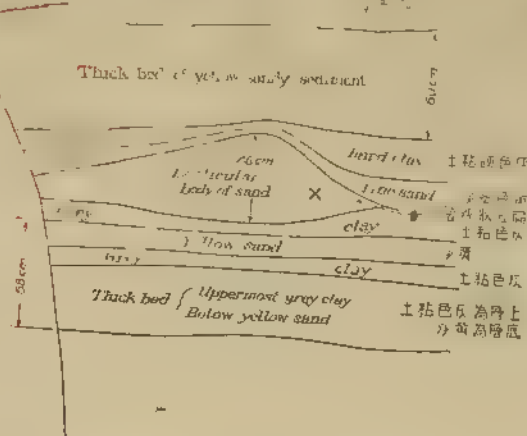
Vom unteren Skelet (B) ist nur erhalten: Bechter Oberkiefer, Unterkiefer, Thoraxskelet der rechten Seite, rechte Vorderextremitat ausschliesslich der Phalangen, Bruchstücke der linken Scapula, ein Astragalus, der zwischen den Femora des oberen Skelettes gefunden wurde. Mit dem unteren Skelet sind keine Artefakte in Beziehung zu bringen."

VI. Small digging in eastern wall of the ravine road.

VII. Skeleton in eastern cliff. When Dr. Zdansky was excavating this skeleton the loess soil slipped away from under his feet and he fell down quite twenty metres without however suffering any very serious injury. As the spot was highly dangerous no further observations were made.

VIII. In the eastern cliff, some distance N. of VII, Black noticed some human legbones.

IX. In the southernmost part of the site, W. of some caves (abandoned houses) N of a small shrine, were found some human bones in a sandy lenticular bodies embedded in a stratified series of fine sand and clay. The local conditions are shown by figure 4 with description appended. The sandy beds slope very gently in a northerly direction (approx. 1:50).



F.g 4.

X. Dr. Black's digging in ashy earth W of the small ravine leading down to the small southern village.

XI. Chang's digging in the northern part of the east cliff. For a length of 7 metres Chang dug into a culture deposit of approx. one m. thickness, ashy soil alternating with charcoal and yellow earth.

XII. 100 metres NE from the small southern village we noticed during the first days of the survey some bones projecting in a loess cliff facing SSE. When Dr. Black visited us during the days 11/10—13/10 I showed him this cliff, and he at once made it clear that these outcrops, mostly legbones, were human and that consequently we had found here an actual burial ground. Pl. XVI shows this spot in the course of excavation, and Map XVIII gives a very clear view of the distribution of the burials. The cliff as we found it can be approximately reconstructed from memory as follows see Map XVIII: cutting away the larger parts of E and D, running through L, cutting away the upper half of R and the head of T, passing close by the feet of M and cutting away the uppermost part of C.

As Dr. Black was forced to return to Peking on urgent business, Dr. Zdansky kindly volunteered to undertake the excavation of this site, a task which he carried out with the utmost care. During the excavation he also surveyed the plan shown in Map XVIII. Before we proceed further with the description of the site it may be necessary to explain briefly the construction of this plan.

All the measurements taken by Dr. Zdansky were determined by three rectangular coordinates, two horizontal, X and Y, and one vertical Z with the point 0 at the earth's surface as the zero of all measurements. The plan as it appears in Map XVIII is divided into two parts, one upper drawn to the scale of 1:25 and one lower to the scale of 1:50. The reason for this arrangement was that two of the burials, D and E, were located so far from the group that the construction of the whole burial site to the scale of 1:25 would have made the Map far too unwieldy. With the aid of the horizontal coordinates O-X and O-Y and doubling of the scale, anybody interested in the true position of D and E can easily construct their place in the 1:25 scale part of the map.

Let us now first survey the vertical distribution of the skeletons as shown in the figures 2-5 etc. printed underneath the capital letters marking the different skeletons. We shall then note that the uppermost burial ends at the same level

site is I 279. There are only two more, G and K, above 300. Out of 15 burials with a recorded vertical position no less than seven are to be found between 320 and 370, which is therefore to be regarded as the vertical centre of this burial ground. The lowest of all the burials is T 415. The vertical distance between the lowest and the highest burial is thus 1.36 metre, within which layer all the vertically recorded burials of this site are to be found. Above 279 m. there is barren soil, probably to large extent brought there when the fields were being terraced for agricultural purposes. This covering soil consisted of a top-layer, 1.5 m. thick of yellow earth, then a yellowish-grey transition layer, 0.9 m. and below this transition layer typical grey ashy earth.

If we now proceed to examine the horizontal position of the skeletons, we note that, so far as we can judge from Zdansky's plan, they were all laid in a horizontal position resting on their dorsal with reference to the N-S line. Of these not less than 9 have their heads turned nearly SE, varying from E. 31° to S 31° E, that is within an amplitude of only 28° . Of the four remaining, two, G and H, are nearly parallel, W 38° S, and W 43° S respectively. K with the head turned S 30° W and M turned N 37° W are isolated exceptions. In the vertical majority-group between 320 and 370 come four skeletons of the horizontal majority group with the head turned SE, but within the same vertical group falls also such an exceptional case as M. The other exceptions, G, H and K, all occur near the 300 level. Thus it seems as if the direction with head towards the SE prevails among the early burials, whereas the custom became more varied in the upper levels. Only one of the graves, Q, contained a rich ceramic furniture consisting of four vessels. For the rest some small artifacts were found in various places during the excavation. How far they may be associated with one or the other burial will be fully discussed in the monograph describing these finds.

It should be mentioned when describing loc. XII that we chanced to find not far below this spot and in a direction towards the small village a unique collection of no than 15 miniature vases, 47-77 mm. high and standing close together.

XIII. This is a place 60 m. NE from loc. IV. The spot is shown in Pl. XIII: 2 as well as in figure 5 in the text. The ravine erosion has here dissected the once continuous culture stratum, so that a small top-layer of culture soil, upon which Mr. Yuan is standing, has been isolated from the main culture deposit.



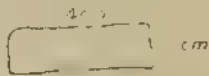
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XIV. At this place, which is the southernmost of all the numbered spots, situated at a sharp double bend in the eastern ravine, there recur on a very much larger scale and in a far more decisive way the same erosion phenomena as are described under XIII. As a full understanding of these processes of erosion is of fundamental importance for interpreting the general setting of the Yang Shao prehistoric settlement, there follows below a special small chapter devoted to a full discussion of this spot and to all the other observations bearing on the erosion problem.

XV. Excavation at the ravine W of the southern small village.

XVI. Excavated deep pocket between two small ravines, west of small village to the south. Will be described in full in the following chapter in the pockets.

XVII. Shaft at the western ravine. During our last week at Yang Shao Tsun Chang discovered at the large western ravine a shaft like the one described under IV above. This shaft was no less than seven metres deep. During its excavation a very interesting feature was noticed, an empty hole in the filling of ashy earth ~~containing pottery~~. This hole was vertical and 1.30 m. long with straight, smooth sides; in cross-section the dimensions were 34 x 12 cm., as shown in fig. 6. In the same filling of ashy earth there were also two horizontal cavities



of much smaller size but otherwise like the big one. There can be no doubt that these empty cavities once contained some perishable objects which had been enclosed in the shaft lining, and these objects, which have since been worn away, can

hardly have been anything but small wooden beams thrown down together with the earth filling, most probably already at the time when the Stone Age people still lived here, as we shall better understand from the discussion below on the erosion.

THE ROAD RAVINE AND THE POCKETS.

The road, which runs from the main Yang Shao village in a southerly direction, in the central part of the old Yang Shao settlement passes through a ravine 3-5 m. deep, which offers excellent opportunities for studying the depth and structure of the culture deposit.

Map VI shows the section which I measured along this road ravine. The section begins N of V and ends S of VI. Its exact position is marked by two dotted arrows. The total length of the section is 161 m. in a gentle slope towards the south. The soil surface is six metres lower at the southern end than at the northern end of the section.

The substratum underneath the culture deposit is everywhere ~~at this spot~~ the red Pliocene clay with numerous small lime concretions. It should be noted that the loess here is nowhere visible overlying the Pliocene clay, whereas it occurs to a considerable thickness in the cliffs of the two deep ravines encircling the site.

The culture deposit is in evidence throughout almost the entire length of the section. Its intact lower part only locally reaches a thickness of 3 m. but in large parts of the section the thickness is over 2 m. The larger part of the culture deposit is entirely unstratified, the typical "ashy earth" rich in pottery, that is the characteristic deposit of the prehistoric sites of Honan and Kansu and which should be interpreted, I believe, as refuse consisting of the local clay or loess mixed with charcoal ash, broken implements and garbage from the meals, in fact the waste material deposited directly by the dwellers in the Late Neolithic Yang Shao village without any interference by natural agencies. But intercalated in the unstratified culture deposit there are two narrow bands of stratified culture soil observable between metres 64 and 92 of the section. These stratified lands are at the most half a metre in thickness. Most likely they represent only a redeposition during the rainy season of such parts of the original unstratified refuse soil as were washed away for some distance by the heavy summer rains. In the following chapter on the erosion we shall learn of much larger such redepositions in a stratified form of washed-out culture soil.

Nearly the whole of the intact culture deposit is capped over by a closely allied kind of soil (vertically striated in the section, a soil which is called "culture soil, removed by later farming.") In fact it is one of the most difficult problems connected with these prehistoric sites in the loess areas of Northern China to distinguish those parts of the ashy earth which are intact from the surface layer which has been carried some distance and redeposited by the farmers of historical times. The difficulty in differentiating between intact and redeposited culture soil lies in the fact that, as a rule, they are both entirely unstratified and practically identical in almost every respect. At first glance the student may suppose that the whole is a prehistoric deposit all the way to the present soil surface. But soon the discovery of fragments of glazed crockery and other objects of undisputed late date side by side with the prehistoric potsherds forces us to realize that to some depth the deposit is no longer intact. Time after time such finds were made, not only at Yang Shao Tsun but also in other sites in Honan and Kansu. Thus, for instance, I found at Yang Shao Tsun in a part of the deposit that I held to be undoubtedly intact, at more than a metres depth, a sherd of glazed ware that could not be older than Sung. Similar unexpected finds of recent objects in what we held to be undisturbed culture deposit are recorded more than once in this volume. At Yang Shao Tsun, where we made our first large-scale excavation, I started at localities II and III systematic diggings, taking a careful record of the stratigraphical position of the finds. In both cases the result was poor and hardly illuminative. When it came to continuing our excavation campaign I determined to leave my private Chinese assistants to dig freely within the dwelling sites wherever they found the best results. I then confined my own personal operations to the constant supervision of my men and to a careful topographical survey in varying scales of the sites and to surveys, drawn to the scale of 1:10, of all the burials, which I found to contain by far the most reliable chronological evidence.

Let us now return to the road ravine at Yang Shao Tsun. I here tried to distinguish the redeposited surface layer from the lower part of the culture deposit, and the result of this study is given in Map VI showing a cap of at most 1.5 m. thickness of removed culture soil hiding nearly the whole layer of genuine intact prehistoric sediment. It goes without saying that in this road ravine I met with conditions uniquely favourable to the study of this redeposition process, and yet I must confess that the boundary line between the redeposited surface layer and the intact main body of culture soil is to no small extent a matter of mere conjecture.

What, then the reader may ask, is that powerful factor which has caused such a wholesale removal of the surface layer of the once intact prehistoric deposit? For anyone familiar with the loess territory of Northern China, it is easy to detect this process that has so fatally reduced the field archaeologist's chances of making accurate and trustworthy observations. Owing to the peculiar structure of the loess soil and its very slight resistance to the attack of the violent summer rains, the farmers have found it necessary to lay out all the sloping fields in horizontal terraces with reinforced drainage for the rain water. This terracing process may be best explained by fig. 1, pag. 16, showing how soil has been cut away and redeposited at the outer part of the terrace, a process which apparently tends to affect in a most complicated and highly treacherous manner the whole extent of every loess-slope.

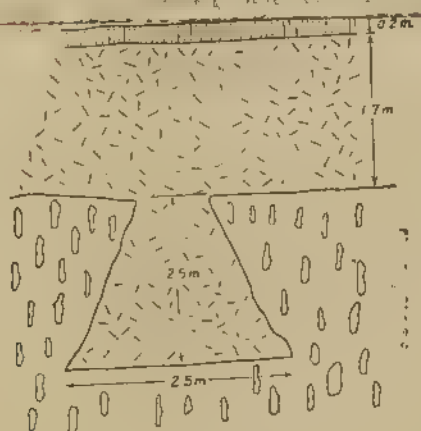
The contact between the culture soil and its substratum, the red Tertiary clay, offers a very peculiar feature which I have named *the pocket*. Fig. 7, gives a



Fig. 7. Culture soil deposit with "pocket" dug into the red clay

very typical instance of one of the shallow pockets. The red clay is here overlaid with 2 m. of typical ashy earth, the culture deposit. But in the midst of the section there is a pocket of strictly rectangular outline, 1.93 m. long and 0.7 m. deep. The culture deposit filling the pocket is grey, rich in ash and small pieces of charcoal. Nearly everywhere there were winding spots of a yellowish green loose substance which was often to be seen upon the pot sherds of the Yang Shao Tsun site. In the pocket potsherds were most common near the bottom.

Another pocket, much deeper and of truncated conical shape, is shown in Pl. XVIII and figure 8, in the text. This pocket was excavated by me personally, and I was able to prove that the basal section, judge from the remaining part, had been approximately circular in shape. The dimensions, as shown by the vertical section in fig. 8, are as follows: beneath a thin top-layer, 0.2 m. of redeposited soil, there is



(移開後已) 土紀化文給和
Culture soil, removed by later farming
Culture soil 土紀化文給和
Pliocene clay 土粘紀新上

Fig. 8. Pocket, Loc. XVI.

a bed 1.7 m. deep of intact culture soil being in level contact with the underlying Tertiary clay. But in this floor of clay there is a hole 0.75 m. in diameter through which the ashy earth continues downwards, and the formerly open space in the clay extends downwards 2.5 m., widening towards the bottom in a tent-shaped fashion until it reaches a diameter of 2.5 m. The level floor of the pocket was smooth and hard, so that the bottom layer of the filling could easily be scaled off, and it then showed a whitish coating on the underside. This bottom layer, 5-15 cm. thick, is rather hard, of yellowish colour and contains very numerous plant impressions. Actually it seems as if this layer originally consisted very largely of straw or some other vegetable matter. Above this hard plant-bearing basal layer there was to the height of 0.6 m. above the bottom of the pocket a layer of very loose and light ashy earth with distinct and regular stratification formed by light layers rich in ash and dark layers rich in charcoal. In the hard bottom layer as well as in the ashy earth were found pot-sherds and also a sewing needle of bone.

As shown by the vertical section, the walls of the pocket converge upwards to form a truncated cone. Still there are some irregularities, especially at the base where the pocket is slightly enlarged in an easterly direction. At a height of 1 m.

above the bottom there is, on the western side, another recess, possibly a side opening from the pocket. But here the conditions were too obscure to permit of any definite judgement being formed.

Upon the side-wall of the pocket there were elongated traces of some tool, mostly in a vertical direction. The traces did not indicate that there had been any digging action but rather moist clay had been pasted on the wall. In several spots it was easy to scale sheets of it off the wall, 5-10 cm. thick, and underneath such a sheet another pasted surface became visible. No soot or traces of smoke were discernible, but only the clean, red clay wall.

I measured the bottom diameter of several pockets of the type shown in fig. 8 and found that it ranged between 1.9-3.00 m. Numerous pockets were to be seen in the road section. In fact they form one of the most intriguing features of this section. Between metres 10-13 as well as 17-19 we came across shallow pockets more or less resembling fig. 7. Between 153-155 we found a deep pocket of the type shown in fig. 8. The part of the section between 40-100 is practically free from pockets. On the other hand, between 117-145 the bottom contour of the culture deposit is marked by pockets crowded close together side by side. Most of them are shallow and in many ways not quite typical. I am inclined to believe that this group forms an exception from the rest. Possibly it marks one or several hut foundations of the old Yang Shao settlement. At the first sight the circle segments shown between 101-104 and 148-150 look very strange, but it is easy to make out how these contours are simply lateral cuts in pockets of the deep tent-like type fig. 8. When we proceed later on to discuss the nature and purpose of the pockets, we shall refer only to this type of deep pockets of the shape of a truncated cone.

With reference to the purpose of the pockets, I quote what I have written this subject in my popular book *Children of the Yellow Earth*, pp. 172-174:

"These pockets cannot be graves, because no remains of human skeletons have been found in them. They are filled with the ashy soil, sometimes more than usually porous, and with a large proportion of ash. The pieces of pots and other artifacts found in the pockets are usually very fragmentary.

Another conceivable explanation is that the pockets are the bottoms of cabins in which the inhabitants of the prehistoric village lived. Such have been found in Europe in dwellings of the same age.

This was the view which prevailed on me during the whole period of my excavations. But when in Peking I reconstructed piece by piece the multiform and frequently very bulky pottery of this locality, it gradually became clear to me that the ancient Yang Shao inhabitants had a much too rich and comprehensive furniture to have lived in such confined cabins.

The most probable parallel to these pockets which I can find in the West are the Kellergruben of Neolithic dwellings at Achenheim and Stutzheim in Alsace, described by Forrer.¹ I reprint in Fig. 9. Kellergruben B and P at Achenheim, as

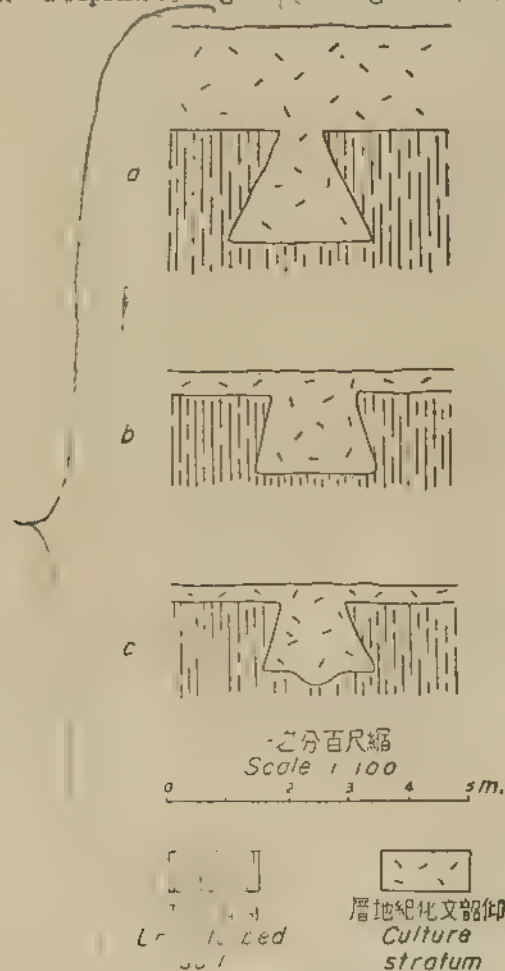


Fig. 9

1. Forrer, *Recherches de la préhistoire, de la protohistorique et de l'histoire ancienne de l'Alsace, articles on Achenheim, Kellergruben, Stutzheim, Wohngruben.*

well as one of the Yang Shao pockets. These figures are all drawn to the same scale and the resemblance is striking, even with regard to the truncated conical section of the cavities.

Forrer interprets his Kellergruben as underground store-rooms, but it appears from his description that there probably existed forms intermediate between "Kellergruben" and "Wohngruben"

We also know, from quite different part of the world, of similar vertical pockets dug into the earth and intended as store-rooms. My friend Dr. Davidson Black has been so kind as to draw my attention to an essay, of especial importance in this connection, by E. A. Hooton, "Indian Village Site and Cemetery near Madisonville, Ohio," papers of Peabody Museum of American Archaeology and Ethnology, Harvard University, 1920, in which, under the name of "cache-pits," these are illustrated pockets identical with those in Honan and Alsace.

The site in Madisonville belongs to the earliest historical period of North America. According to Willoughby, who worked up the material and surveyed the results, the site was inhabited by an Indian tribe "immediately before the first contact of the Indians with Europeans, but the site was still inhabited in the protohistoric period when the inhabitants were in a position to obtain a few objects of European iron, brass and copper, together with some glass beads, an exchange which was effected either directly with early missionaries and traders or indirectly with their Indian neighbours."

The cache-pits of Ohio are thus, judged by our Asiatic standards, almost completely modern, and the striking resemblance to our discovery at Yang Shao Tsun only indicates a parallelism of similar conditions of life, or possibly—a somewhat far-fetched alternative—an obstinate retention of a custom which the Mongolian ancestors of the Indians brought with them to America from their Asiatic home.

These American cache-pits were filled with leaf mould, sand, ashes, etc., in distinctly varying layers, and it is interesting to note that the only cache-pit which I carefully examined in Yang Shao Tsun also showed a distinct stratification of a 5-15 cm. thick yellow substratum, with abundant plant impressions, and above it, up to 60 cm., a clear alternation between light ash strata and dark layers with abundant pieces of charcoal.

In the cache-pits of Ohio, as in Honan, artifacts abounded: fragments of ceramics and implements of stone and bone, etc.

Concerning the use of these cache-pits Hooton gives such a picturesque and instructive account that it deserves to be reproduced:

In the opinion of the author the cache-pits were used for the storing of seed and other goods. During the harvest the maize was placed in a number of such store pits, which were situated near the dwelling of the family. Perhaps they were even within the cabin, or connected with it. During the winter one pit after another was emptied and the empty ones became refuse rooms into which were thrown ashes, remnants of meals and other household refuse. When the contents of a pit show stratification it is due to the fact that the pit was filled at successive intervals when it is not stratified it is probable that it was completely filled at once.

Direct proof that the cache-pits were used for the purpose stated is to be found in the fact that in two cases seed has been found in them.

Within the Madisonville area were found numerous graves, but they had no connection with the cache-pits, except in rare cases where for the sake of convenience an abandoned cache-pit was used for the interment of a corpse."

The erosion phenomena.

As has been said above the Yang Shao site lies in a setting of two ravines, which have been cut to a depth of 40-50 metres into the plateau of Tertiary clay and Pleistocene loess. At first it seemed to me probable that this site had been selected because nature here offered protection on all sides, with the exception of a very narrow isthmus which connects the site on the north with the plain outside the ravines. I therefore at first regarded the ravines as the primary phenomenon and the village as a settlement conditioned by the ravines. But as early as my first visit in the spring of 1921 I had observed a section which pointed to an entirely different and much more astonishing conclusion. During the detailed examination in the autumn of the same year I had an opportunity of completely proving the correctness of this new view.

In many cases the cultural deposits extend to the edge of the ravine and in certain places one sees isolated pillars consisting mainly of clay or loess, but with a thin cap of cultural earth. This, however, only shows that a certain amount of erosion has taken place since the dwelling site was abandoned, and that locally parts of the ~~connected~~ cultural deposits have been completely encircled by this erosion.

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But in the southern part of the site, near the junction of the two main ravines, we found sections which speak a much clearer language. The evidence here afforded was considered so important that I made a survey of this southern area on a scale twice as large as the one used for Mr. Yuan's main map. (Map IV). My survey on the scale 1:2,000 is shown by Map V. It should be noted that what is marked IX in Yuan's map is called "Abandoned caves" in my survey, and that XIV of Yuan's map is called "Castle Cliff" in my map.

The most illuminative section we met with is at the place named Castle Cliff (Loc. XIV). The spot is marked on Pl. IX by two of my men standing on the top of the hill. We can very distinctly see how the sediment below them is stratified. On this the cliff is nearly vertical and the stratified series inaccessible. But behind the two men there is a slope down which we were able to climb and examine the stratified series. (Pl. XV: 2). Here there is, at the top, one meter of loess-like material. Below this top-layer there is a series, not less than 5.9 m. thick of stratified, fine sand with thin intercalations of clay and beds of fine gravel. In all this series of stratified sediments there were found sherds of typical Yang Shao pottery and pieces of charcoal (at the spot on Pl. XV: 2, where the man in the centre is pointing with a stick, there was found such a small and delicate object as a sewing needle).

The sand locally contains a certain number of pebbles; in other parts it shows spots of the characteristic yellowish-green coating that is often seen upon the potsherds. Locally there are also plant impressions in the sand.

Below this series of 5.9 m. stratified beds there were two meters of coarse gravel devoid of pottery. The gravel rests directly upon the red Pliocene clay.

As appears from Pl. IV and the sections Map 3, these artifact-bearing stratified deposits form fantastically shaped, castle-like ravines of 40 metres depth all round them.

The conclusion which must be drawn from these observations suddenly becomes clear and inevitable at the time when the artifact-bearing sand and gravel deposits were formed, the present ravines did not exist, but a water-course flowed approximately at the level of the plateau Fig. 10. Far from being, as at a later stage, vertically erosive, this age was marked by accumulation, as appears from the thickness of 6 metres of the artifact-bearing deposits left in running water. We

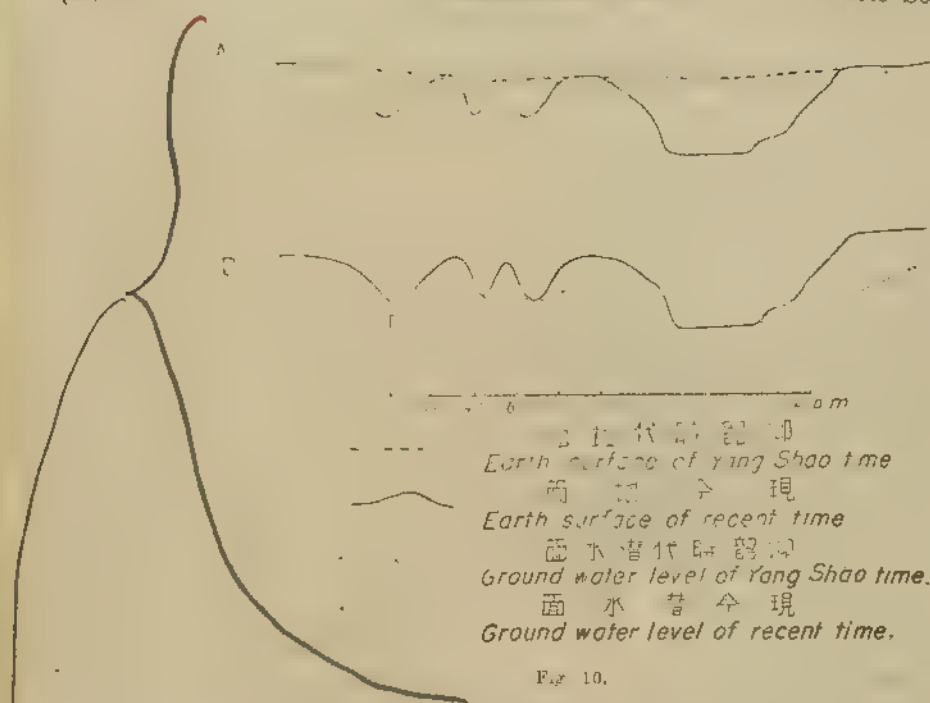


Fig. 10.

cannot definitely decide whether, and to what extent, these deposits were formed whilst the prehistoric village was inhabited, or only some, hat later. But this does not in the least affect our extremely important conclusion that the ravines did not exist at the time of the Yang Shao civilization, but that on the contrary the village was built on the unbroken plain, which was here watered by a water-course running in a very shallow valley

The great ravine system, two branches of which enclose the Yang Shao Tsun site, continues in a southerly direction for 8 km., until it joins the main valley at the town of Mien Chih. Five km. south of Yang Shao Tsun, at a place named Kuan-chuang, I encountered in this ravine conditions very similar to those at Castle Cliff. Pl. XIV: 1 gives a view of the main ravine at Kuan-chuang. Here, in the cliff overlooking the big ravine, there are many cave dwellings all round a small shrine on the top of the cliff. On the eastern side I found, underneath 4 m. of loess, a layer of gravel which is a thin bed of gravel containing small pieces of pottery and Yang Shao pottery. The valley

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Here again a proof that the big ravine the continuation southwards of the Yang Shao Tsun ravine system did not exist during the time of the Yang Shao culture.

Our study of the erosion phenomena in the Yang Shao Tsun area has proved beyond a doubt that the intricate system of 40 meters-deep gullies has been cut since the time of the old Yang Shao settlement. This fundamental fact leads to a series of important conclusions.

Figure 10 illustrates the influence of the ravine topography upon the ground-water level. At present the ground-water level lies deep down at the bottom of the gullies. This can be clearly seen from Mr. Yuan's excellent map where springs and ponds, two in Tung Kou and two in Hsi Kou, clearly show the ground-water level compare the lower section of fig. 10.

At the time of the Yang Shao settlement, there were no ravines in this area. The streams, which then deposited sand and gravel, mixed with debris from the ancient village, flowed in shallow depressions, only a few meters below the main level of the plain. The ground-water level must then have been about 35 meters higher than it is at present.

The knowledge of this fact gives us the means of explaining one of the strange features of the Yang Shao Tsun site, the so called shafts, one near the eastern, the other at the western ravine. The first of these shafts, loc. IV, was 5.4 m. deep and its bottom was approximately 33 m. above the bottom of the ravine below the chimney. The western chimney, loc. XVII, was 7 m. deep and its bottom was 34 m. above the bottom of the nearby Hsi Kou. It is really striking how exactly the positions of these chimneys, 33 and 34 m. respectively above present water level, correspond to the ancient water level (35 m.) which we have deduced from the erosion phenomena.

The shape of the shafts, narrow cylindrical funnels, several times deeper than the pockets, shows that they were certainly made for a purpose quite different from that of the pockets. The only reasonable explanation seems then to be that they were water wells, made for the purpose of obtaining good drinking water from the then water level.

In a coarse, thick-walled potsherd from the Yang Shao Tsun site there were noticed minute impressions of some kind of seed. The microscopic examination

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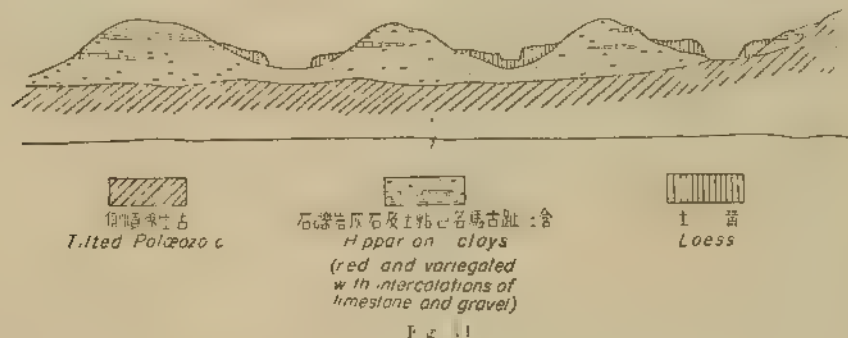
undertaken by two Swedish botanists, G. Edman and E. Söderberg, proved that these characteristic imprints were from the husks of rice (*Oryza sativa* L.) which was thus cultivated at Yang Shao Tsun by the people of the late Stone Age.

This extremely important discovery, for which we have to thank the acumen and erudition of the above-mentioned botanists, harmonizes perfectly with the account given above of the geographical changes at Yang Shao Tsun during the last 4,000 years. At the present day the cultivation of rice in the ravine area would be impossible. At the time of the ancient Yang Shao village, when the district was a connected plateau with streams coursing through shallow channels, the conditions for rice cultivation were considerably more favourable.

Since we have now shown that the shafts were very likely water wells used at a time when the ground-water level was near the main level of the plateau of Yang Shao Tsun, we are better equipped to discuss the full significance of the strange empty spaces in the filling of the western shaft Loc. XVII. The largest of these empty spaces was 1.3 m. long, with a cross section of 34 x 12 cm, everywhere with straight plane sides. On investigating them, we arrived at the conclusion that they were due to wooden logs which had been enclosed in the filling and had later completely decayed, leaving only empty spaces, exactly corresponding to the shapes of the logs. The important question is now, when was this shaft filled? It seems much more likely that the filling process took place already during the life time of the old Yang Shao village. To understand this it should be noted that the filling was effected with the typical ashy earth, the culture sediment. Had the shaft been left standing dry and empty for centuries, it would certainly have caved in sooner or later and been filled with the natural loess-like soil forming its walls. Then also the walls would have been largely destroyed by the caving-in process. Merely the fact that the funnel-walls were intact to a height of 7 meters shows beyond doubt that the filling took place soon after the well was abandoned. Consequently we arrive at the conclusion that most likely the old Yang Shao dwellers themselves shaped and finally threw away the beams—the impressions of which were found in the shaft Loc. XVII. Thus we arrive at a very fascinating picture of the high cultural standard of the prehistoric Yang Shao people: they cultivated rice, dug wells to obtain good drinking water, and were sufficiently advanced carpenters to shape wood in rectangular beams.

There still remains one feature to be mentioned in connection with the erosion processes at Yang Shao Tsun. We have learnt that the ravines in their present shape were formed during the last four thousand years and that, at the time of the building of the prehistoric settlement, this region was an unbroken undulating plateau. Still it is easy to prove that these ravines are only to a certain extent a new topographical feature. In fact they are a pre-loessic feature, filled and hidden by the loess, and revealed by the vertical erosion of the last four thousand years.

Every student of the loess will soon become familiar with the fact that this eolian sediment is to a certain extent a valley deposit filling and veiling the erosion channels which existed when the loess deposit began to form. In this connection I reproduce here from my paper "Essays on the Cenozoic deposits of Northern China" page 122, a figure (fig. 11) which shows very clearly how the



loess at Hsinan Hsien, E of Yang Shao Tsun, is a valley deposit, filling the pre-existing valleys. In the same way I was able to prove at Yang Shao Tsun that the loess is confined mostly to the sides of the big ravines, where it appears in considerable, but greatly varying thicknesses. In the central field, south of the modern village and between the two main ravines, I nowhere noticed any primary deposit of the loess. On the contrary, the substratum of the culture deposit here was everywhere the red Pliocene clay, as shown most clearly by section Map VI.

THE PU CHAO CHAI SITE.

During the excavation at Yang Shao Tsun, my collector Chen brought to my knowledge an important site at Pu Chao Chai (不召寨), a village situated 10 li

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Pu Chao Chai

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west from Yang Shao Tsun and 1. li NW from Mun Ch'ang. On the 21 of November, accompanied by Dr. Zdansky and under the guidance of Chen, I went to Pu Chao Chai, and we then made the observations which are briefly recorded here. It was my intention to return to this site for a systematic survey, but I failed to get an opportunity to do so.

The location of Pu Chao Chai is similar to that of Yang Shao Tsun, in that the village is situated at the confluence of two big ravines, but in this case the modern village lies upon the actual promontory between the two ravines. These ravines are also much wider than those at Yang Shao Tsun, but they also have very steep walls. The broad, flat bottom of the ravine is covered with masses of pebbles. Such were also seen embedded in the loess of the ravine walls.

Close by the village were seen numerous patches of culture soil, grey with pieces of charcoal, quite like the "a" layer of Yang Shao Tsun. Two differences from Yang Shao Tsun were to be observed: the thickness of the culture stratum is here one metre at most, and we saw no trace anywhere of the pockets which are such a prominent feature of the Yang Shao Tsun site.

Chen took us two li north of the village and showed several exposures of culture soil which seemed to be only in isolated patches with a thickness of less than a metre, but there were in these places quite a surprising number of well-preserved specimens of pottery and other interesting artifacts.

Close by and below the northern village gate is a cliff with exceptional thickness of the culture stratum at least two metres. Here I noticed, as well as good pottery, five thin layers of a hard white limelike substance such as we had occasionally seen at Yang Shao Tsun. Lowest down there were three such thin layers, one 8 cm. above the other. The whole series is uniformly horizontal. The white substance appeared to be broken into small pieces, some few cm. long. Half a metre higher up there are two more such layers of the white substance, each layer only 2-3 mm. thick. In the loess, but still whitish material on the underside of each layer there were seen numerous small plant impressions. Close by the village gate, Zdansky and I dug out three specimens of deer, two small and one large. Of two at least nearly the whole skeleton remained. They were found in typical culture soil along with pottery and masses of charcoal. It is difficult to imagine for what purpose the prehistoric Pu Chao Chai people buried

...the whole and ... nothing to indicate that the specimens were of a late date.

At one site near the ... an abandoned dwelling-cave a body of yellow loess-like soil, containing a number of pieces of pottery, smashed but quite complete.

Of the varied and abundant material that we brought home from this rich site all the ceramics were of the coarse monochrome type. Our search for shards of the fine red thin walled ware, with designs in black, which forms such a striking feature in the Yang Shao Tsun site was futile; not a single fragment was ever found at Pu Chao Chai.

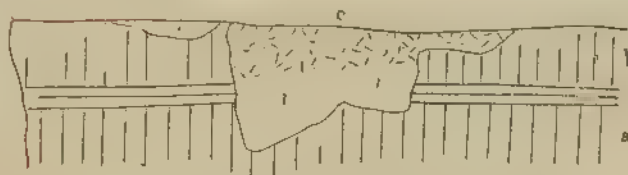
Subsequently, when collecting alone, Chen found two further sites, which yielded material very like that at Pu Chao Chai site, Hsi Chun Tsun (西春村) is near the road from Mien Chi city to Yang Shao Tsun, the other Yang Ho Tsun (陽河村) is 3 km. NW from Mien Chi city see Map II. I never got an opportunity to examine these sites, but the material brought home by Chen is similar to that from Pu Chao Chai, and no painted sherd was ever found at any of these sites. Thus it seems as if we have, in the prehistoric sites north from Mien Chi city, three localities, Pu Chao Chai, Hsi Chun Tsun and Yang Ho Tsun, which, in contrast to Yang Shao Tsun, have no painted pottery. As the coarse monochrome pottery and other artefacts are much the same at all the four sites, there can hardly be any great difference in age between Pu Chao Chai and Yang Shao Tsun. But this problem will be fully discussed when the rich ceramic material of the two sites is described.

SITES IN YANG CHU HSIEN, SHANSI.

In the introductory chapter on the history of our field research I have given (Page 1) a list of the prehistoric sites found by my collector Chuang (朱永成) in Shansi during the autumn of 1926.

Personally I had the opportunity to visit only two of these sites and will give below some topographical notes collected during the few days I could spend in this area. Yang Chü Chen (陽曲鎮). This locality is situated 30 li (17 km.) in a northernly direction from the hsien city Yang Chü Hsien (Tai Yuan Fu). The

area is fully dominated by the loess which is here deeply eroded to form a broken and highly picturesque scenery, (Fig. 12). The motor road from Tai Yuan Fu to



a. Loess b. Stratified loess c. Culture soil

Fig. 12. Section Yang Chu Chen

Tatung passes through this area in a $W\ 35^{\circ}\ S - E\ 35^{\circ}\ N$ direction. The site is situated at the SE side of the road and the extent of the culture area parallel to the road is 270 meters. The culture soil area is surrounded by ravines and forms a broad lobe connected with the plateau land further east by an isthmus only 78 m. broad.

According to an eyesight estimate the site is about 10 meters above the small stream Kan Ho at the village Yang Chu Chen. / Pei T'ai Ti (裴台地). When continuing along the motor road for a distance of 15 li from the Yang Chu Chen site we reach, after crossing the Kan Ho, the Pei T'ai Ti site which has been made known due to the making of a road that has cut through the site and exposed earth full of potsherds in the bank thrown up on both sides of the road cut.

The direction of the road here is $S\ 30^{\circ}\ W - N\ 30^{\circ}\ E$. For a distance of nearly 120 meters there is a nearly continuous exposure of culture soil, locally 1-1.5 m. deep and irregularly superposed upon the hard yellow loess. Locally the culture soil forms pockets in the loess but in a different manner from the pockets of Yang Shao Tsun in Honan, these pockets exhibiting a rounded vertical contour as shown by fig. 13.

Both these sites, Yang Chu Chen and Pei T'ai Ti agree as to the composition of the furniture: large vessels with the mat-pattern and in many cases Li-tripod legs, stone knives with only a single hole, stone axes and coarsely hewn mattocks of stone. On the other hand we never found here any trace of the Yang Shao painted pottery, or armlets and vessels of the Ting-tripod type.

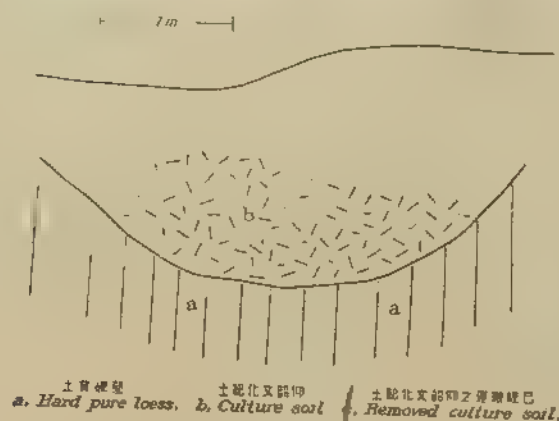


Fig. 13 Section at Pei T'ai Ti

POTTERY FINDS AT THE HUN HO, WEST OF PEIPING.

When studying in 1919 the Ordovician limestone area at both sides of the Hun Ho (浑河), in the Western Hills of Peiping I noticed north of Men T'ou Kou (门头沟), at the big bend of the river at Chin Chuang (金庄), on the left bank of the river, in an altitude of 35-37 m. above the river, small sediment terraces probably of the Malan stage. These small patches of sediment had been terraced by the farmers as shown by the text figures 14 a-c. also shown in Plate XXIV.



Fig. 14

Upon these small agricultural terraces I collected fragments of pottery of prehistoric type, among other things legs of Li tripods. No painted pottery was found here.

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THE SHIH LI P'U SITE, CHANG AN HSIEN, SHENSI.

Ten li east from Sianfu, on the western bank of Wu Shui Ho (五水河), a site was found NE. of the village Shih Li P'u (十里鋪).

The discovery was originally made in the autumn of 1922 when Dr. O. Zdansky, who then acted as my collaborator for collecting fossil vertebrates, went to Ching Yang Fu in eastern Kansu. When he with his party passed through the said village E of Sian, one of his men named Chang (張), discovered NE of the village the ashy earth with artefacts well known to us from our work in Yang Shao Tsun.

When in the spring of 1923 I and my party passed through Sian on our way to Kansu, some of my men went to make some additional collecting in the said site. Unfortunately I was so occupied by negotiations with the officials in Sian that there was no opportunity for me of examining the site and consequently I must confine myself to quote some facts communicated by my collector Pai who took part in this work in May 1923.

The village Shih Li P'u is situated on the edge of the 20-30 metres high loess cliff which here rises above the river-plain of the Wu Shui Ho.

The main road from Tung Kuan to Sian passes through the village Shih Li P'u, climbing the loess cliff by means of a deep road ravine.

The site is located on the NE side of the village and is bounded in the east by the cliff facing the Wu Shui Ho valley and to the north by a ravine. Here there were several "pockets" of the type well known from Yang Shao Tsun. In these pockets the culture soil occasionally reached a thickness of fully two metres.

The collection made here was not very large. Pottery of the common monochrome Yang Shao type but not a single piece of painted ware, some stone axes and some pointed bone implements. The last mentioned tools are most interesting because this is the only place where we found made in stone these pointed tools which are commonly made in bone.

THE SHIH LI P'U SITE, HSI NING HSIEN, KANSU.

As indicated by the name, this site is situated ten li from Hsi Ning (海寧), city. The site itself is located to the east of Shih Li P'u (十里鋪), village close by the road leading to Hsi Ning and just where this road crosses a small stream, which

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with a narrow bend flows down to join the Hsi Ning Ho (西寧河). This general location of the site is well shown by Map VII. Map VIII shows the site in greater detail. The road and the bend of the river are easily recognizable from Map VII. Zero level of this survey is the Hsi Ning Ho opposite the surveyed area. Figures that are not underlined give the altitude in metres above this zero. The underlined letters and figures mark excavation stations. Thus 9/15.7 indicates excavation station 9, which is 15.7 m. above the water level of the Hsi Ning Ho at this place.

As stated in the introduction, this site was discovered by Chuang (莊永成), when we were travelling up to Hsi Ning, and the find was very important in so far as it was the very first indication of the Yang Shao culture in NW China. Chuang's initial observation was made at the spot marked 1 in Map VIII. Here was a lower layer containing mostly charcoal and ashes. Above this a middle layer of yellow earth, partly coarse, tending to gravel. The uppermost layer was unusually rich in potsherds.

2 is the pocket at the top of the cliff overlooking the stream. This pocket is very clearly visible in Pl. XXVII:2 where Chuang is seen standing upon the centre of the pocket. Here the lowermost layer was ashy earth with a maximum thickness of 0.74 m. This dark soil is overlaid with 0.4-0.5 m. yellow soil containing more rare but, in part, good finds.

3 is a small digging near 2. (Chuang).

4 is Chin's digging near 3.

These two localities show the same stratigraphical sequence as 2. 4 is specially interesting as Chin found here two pots, the smaller one placed upside down as a cover to the bigger pot, which contained the skeleton of a child.

5. Here I noticed at the surface pieces of very big vessels, and I excavated parts of 3-4 specimens.

6. Pocket in the slope between 1 and 12. The lower part of this pocket (a) is rich in pieces of charcoal and a brown loose mass of decayed vegetable matter. The upper layer (b) consists of yellow earth with intercalations of ashy earth containing pieces of charcoal and artifacts. In the course of the excavation it was found that the artifact-carrying lense, which is both under and overlaid with a hard yellow loesslike soil, dips in the direction of the slope, a further fact that goes to prove how fully the present topography was ready modelled before late Neolithic time.

Observations in the vicinity of the site indicate that the yellow earth here mentioned is not genuine loess but a beautifully stratified plateau deposit formed through a redeposit, partly of the Kueite red beds, partly of the true loess, as indicated by the alternating red and yellow layers. The prehistoric site is located on the edge of the plateau formed by this redeposited sediment. That the barren yellow earth not only underlies the artifact-carrying lense but also covers it may only mean that the farmers in their usual way have carted soil from one place to another in order to form a level field.

7 and 8 were digging places on level ground where big broken pots were seen partly projecting at the surface, just as was the case at 5.

9 was a small find resembling 2-4.

10. Here Chin found vessels of the same type as 5, 7 and 8.

11. A shallow digging with few finds near B.

12. A thin layer containing artifacts and some pieces of charcoal in yellow earth with gravel. Above the artifact-carrying layer 2, 5 m. of yellow earth, probably a filling in historical time.

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THE CHU CHIA CHAI SITE.

Map X, Pl. XXVIII, XXIX.

In the historical review of the discovery of the prehistoric sites I have recorded how we found at Chu Chia Chai (朱家寨), 17 km. up the river above Hsining (西寧), a rich site of late Yang Shao age.

The river plain of the Hsining Ho (西寧河), is here very broad, as is seen from Pl. XXVIII: 1. The village of Chu Chia Chai is situated on the northern side of the river at the base of a small hill rising more than 210 m. above zero of our survey, which runs through the burial place in the southern half of the village. A small tributary to the Hsining Ho runs in a southerly direction with a winding course half a kilometer E of the village.

In the northern and larger part of the village, culture soil was noticed in many places, in road ravines and specially beneath the houses. In fact, the best places were just inside the village below some houses. In this deposit my men had already before my arrival made extensive collections of pottery and other artifacts of a type indicating late Yang Shao age.

Very soon after my arrival I discovered the rich and interesting cemetery in the southern most part of the site, and this subsequently absorbed all our attention. For this reason I must here limit my note on the dwelling-site to a statement of its extent in a triangular figure with a length in N-S direction of 850 m. and a maximum width of 470 m, giving an area of 226.900 square metres. The rich dwelling-site deposit is confined to the northern section of the area within the large northern part of the village Chu Chia Chai. The southern part of the site close to the north of the smaller rectangular southern part of the village is entirely dominated by the cemetery (Map XIX).

Topographically this site, as well as other sites studied by me in the Hsining Ho basin, are characterized by the fact that they are not located upon the escarpments of Malan terraces as is the case with dwelling-sites of the T'ao Ho (桃河) and the Kueite (德貴), valleys. Here the sites lie upon the gently sloping river plains of the recent streams.

NOTES ON THE GRAVES EXCAVATED AT CHU CHIA CHAI.

Maps XIX, XXIII, XXIV Pl XXVIII, XXIX.

During our excavations of the Chu Chia Chai dwelling-site some complete pots were dug out by my men in that southern part of the village which is indicated on the map by a rectangle extending NE-SW. The exact place of these first finds was near the road at the letters "ial" of "Burial site" on the map. From my experience of the excavation at Yang Shao Tsun (仰韶村), in Honan, where a large burial place was found in the southern part of the site, I surmised the possibility of finding a similar burial place at the mentioned spot within the Chu Chia Chai site.

Close to the north of the rectangular settlement marked on the map, there was a pit from which the farmers dug *huang t'u* for mixing with the manure. Upon examining the wall of this pit I soon discovered traces of human bones, and even a number of beads became visible on this first reconnaissance. Before beginning excavations on a large scale I surveyed this wall, which is shown in text-figure 15. The Roman figures refer to the numbered graves as described below.

As the indications of burials were all in the northern wall of the pit it was evident that further graves were to be expected to the north of the pit. Here was

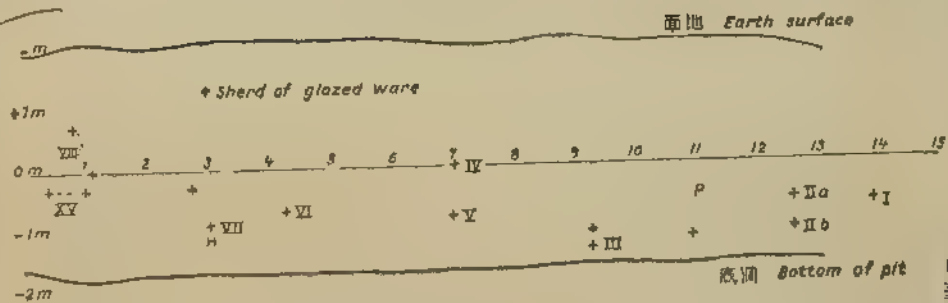


Fig. 15. Section showing loess-wall at beginning of Chu Chia Chai excavation.

a wheat-field, but an arrangement having been come to for the indemnification of the owner, excavations were started. Text-figure 16, shows the dimensions of the

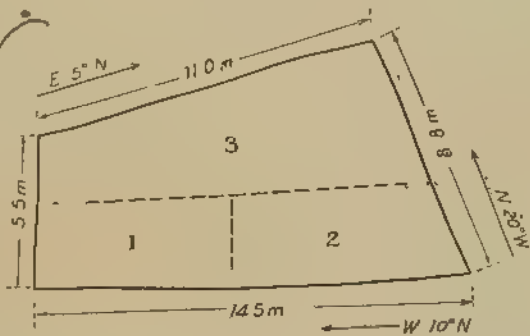


Fig. 16 Plan of the excavated area, Chu Chia Chai burial site.

small spot excavated by us. First we dug out the SW section marked by figure 1, later we extended our operations to section 2 and finally to 3 ~~excavating in all~~ square metres. Further graves may be expected to the north of the area explored by us, but other sites were calling for my inspection, so I had to discontinue the work at Chu Chia Chai before all the graves could be excavated.

As will be seen from the section shown in fig. 13, no graves were encountered in the first metre from the present earth-surface, but here, at a depth of 0.7 m., a piece of modern porcelain was found, indicating the removal of soil by the farmers so often encountered in our archaeological excavations.

In the second metre from the surface only the burial VIII was met with at a depth of 1,3 m. The majority of the burials shown in the section were found in

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the third metre, but one burial (III) was found as low down as 3.4 m. below the surface.

The plan of the whole excavation (Map XIX), shows the vertical position of the individual burials referred to a local datum level, zero, which is two metres below the surface of the earth as shown in section fig. 13. / Explanation to Map XIX.

When starting the excavation of the Chu Chia Chai burial site I had made up my mind to proceed with the plotting of the different burials by the same method of survey as was utilized with such complete success in the Chia Yao grave field (Map XI) and the Sha Ching S. grave field (Map XXII). In both these cases all the burial were very exactly recorded by means of bearings from one single central point (O in Map XI and P in Map XXII) and tape measurement of the distances in cm.

The Chu Chia Chai survey was started in exactly the same manner, with P as centre of the polar coordinates. In order to establish a datum point that could be identified at a future continuation by another scientist of the only partly carried-out excavation, I took first of all from point P a bearing to a tree (marked Tr in the map) at a distance of 8.40 meters from point P. In the bark of this tree I cut, exactly in the zero level, a cross ~~of this shape~~ that may serve for future reference to my survey.

From the point P I further measured the position in the plan of all the zero level pegs 1-14 shown in the section fig. 15. From point P I also measured some distant finds in western direction (Police, S. X and Chang pot) as well as the position of S. XII.

But already at this very early stage of the excavation such masses of earth were accumulating between P and the burials, that some new means of surveying had to be resorted to. In the nick of time I measured from P two auxilliary stations named a and b in the western half of the excavation. At a later stage two further auxilliary stations, c and d, were measured from a and b, and from these four auxilliary points the main bulk of measurements were taken.

Skull I. Map XXIII. Head missing owing to previous excavation by the farmers. The pelvis was lying deepest down. The leg bones were, according to estimate from memory, 20 cm. higher. The left femur went obliquely down to

its natural attachment to the pelvis. The right femur was found removed 0.8 m. to the west.

The broken pot was squeezed in underneath the tibia-fibula of the left (?) leg and these bones had to be removed before the pot could be dug out.

Underneath the slightly dark-coloured layer where most of the burials were concentrated there occurred everywhere in this burial site a fine pure yellow sand, which seems to have formed the local surface sediment at the time when the burials were laid down. At the eastern and northern sides of this skeleton it could clearly be seen that the dark soil carrying the bones formed a shallow pit in the pure yellow sand. It seems as if a pit had been dug into which the corpse was squeezed down with the legs lying slightly higher than the rest of the body.

The soil above the bone heap contained small pieces of charcoal, though still more sparsely than in the case of the soil above IIa. *Skeleton IIa.* (excavated by Andersson).

The painted pot above IIa was situated 32 cm. E from peg 12. The lowest of the pot was on a level with the peg. The pot was lying sideways (the unbroken handle turned downwards), mouth towards the south.

Beneath the pot much charcoal, which together with the red colour of the soil from burning? continued downwards for 50 cm. to the surface of the bone heap.

Three beads, one close to the outside of the pot, one 15 cm. deeper, one 50 cm. below zero-level, at the surface of the bone heap; here also a needle, the point of which was broken during the digging and could not be recovered.

The bone heap, the surface of which is 50 cm. below zero, consisted of a densely packed mass of bones of the upper half of the body: mandible, costae, vertebrae, scapulae etc. The bones were massed quite irregularly: the mandible was lying upside down with two vertebrae inside and costae packed round it.

In the upper part of the bone heap close by the scapulae was found a green stone pendant? Four further beads were found inside the bone heap. Part of the skull with the complete set of teeth was also found in the bone heap. Close by the palate a detached vertebra.

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Skeleton IIb. /Andersson/

0.5 m. underneath IIa Chin found part of a mandible which caused me to undertake an excavation that uncovered a second heap of human bones and among them a few beads. In an eastern direction from this bone heap were found the following pots, which may belong to this skeleton:

1. Pot with two lugs and painted design in the shape of rings, 1.14 m. from peg 12 in E direction, 1.05 m. beneath zero.
2. Bottom of large painted vessel: from peg 12 1.57 m. in the direction E 6° S., 0.72 m. beneath the peg

Skeleton III. /Chin/

Uppermost a big high pot lying with the mouth turned to the W.

About 30 cm. deeper, as shown in the section fig. 1¹ a bone heap which was very incomplete, a large part of it having been dug away before our arrival. Together with the bones the bottom of a large vessel, some smaller sherds and a number of small bone-plates compare Andersson: Preliminary Report page 14.

Skeleton IV. /Chin/ Map XXIII.

The position of the skeleton was remarkable in so far as it was resting on the ventral side with the back turned upward. The pelvic region had moved slightly westwards. The right scapula close to the head. The head bent to the left and forced back so that the face was nearly vertical.

Skeleton V. /Chin/ Map XXIII.

The skull was broken and one numerous and some rib bones squeezed into it.

Close to the head were found a large number of beads.

The cross on the plan Map XXIII where the clin. cuts on the femur is the same as the cross in the section fig. 1¹

The cross west of the skull indicates a stone chisel, which was found 32 cm. beneath the adjacent bones.

x The name within brackets indicates the man who excavated the skeleton. I found that my time occupied with surveying as well as packing and clearing the site, leaving the excavation work to my men, except in critical cases when I personally did the excavation.

Skeleton VI.

A standing pot with painted design, 2.3 m. from peg b in the direction S 15 W. The mouth of the pot 1.02 m. beneath peg b.

Round the mouth of the pot and above it to a height of 0.35 m. an heap of bones with the sacrum above the pot's mouth. The bones form an irregular square with the long bones lying N 20°W-S 20°E. Two layers of long bones, one femur in the lower one.

Close to the north side of the big pot a smaller one, also standing. In the earth round the pots a small green stone, stone beads and small minute rectangular bone-plates.

Skeleton VII. (Chin).

On the spot marked II in the section Chin excavated a great number of small beads. About 20 cm. above this spot a few bones were visible in the cliff. During the excavation they proved so insignificant that they were thrown away.

Skeleton VIII. (Chen).

A bone heap without skull extending obliquely downwards, as shown by the section.

To VIII or to XII belongs possibly a fragment of a painted vessel 2.15 m. NW from peg 3, 0.2 m. above the peg 10.

Skeleton IX. (Chin. Map XXIII. ✓)

From peg 6 1.75 m. in the direction N10°E to the top-point of the skull, 35 cm. above datum level. This top-point of the skull, marked O on the plan of this skeleton, Map XXIII, is the local zero of this skeleton plan.

Among the bones a green stone, 6 bone splinters and 11 small beads. Among the small bones fingers and toe bones, bone needles and another bone object.

Skeleton X. (Chin).

A skeleton lying W 20°N local E 20°S. The bone heap 1.8 m. in length. The easternmost bones about 1 m. from the head.

Skeleton XI. (Chin).

A skull only, turned upside down. Also the mandible turned upside down in front of the forehead with all of the teeth left on it.

Left half of occipital base blackened, apparently by burning

Middle of the base of the skull, forming the skull's highest part, 0.38 m. above datum level. From peg 4 0.44 m. in the direction NE.

Skeleton XII. (Chen). Map XXIII.

Regularly resting on its back. Head with the lower jaw wide open. Left humerus not visible, missing or dislocated downwards.

The orbits 0.62 m. above zero. The toes 0.20 m. lower than the orbits. Figure 1 to the west of the skeleton marks the position of a painted pot 20 cm. below the upper part of the pelvis. Figure 2 far to the east of the skeleton marks one big and three small sherds of painted pottery, 15 cm. above the left under-arm. 20 cm. below the toes a tubular black bone. Below the body some sherds of painted pottery.

Skeleton XIII and two pots|probably not belonging to this skeleton. Map XXIII.

The cross upon the fragment of skull is 1.07 m. from peg a in the direction N 42° E, 27 cm. beneath peg a. The fragment of skull was|to|gether with the limb-bones, as shown in the plan Map XXIII, quite isolated, and it seems hardly probable that the distant pots shown on the same plan belong to this burial, but rather to skeleton XII.

Skeleton XIV.

From peg ① at a distance of 0.40 m. in direction N 15° E a fragment of skull.

Between the peg and the skull a painted pot: 0.25 m. from peg ① in direction N 30° E.

Both the pot and the bottom of the skull on a level with the peg.

Skeleton XV. (Chen). See section, pg. 16

A bone heap in the direction W E, length 1.30 m, width 30 cm.

Head at the western end raised in nearly vertical position, facing east. Counted from the back of the skull 0.75 m. in E direction the mandible in the midst of leg-bones and ribs. A tooth 1.15 m. from the back of the skull near the "foot-end" of the bone heap. But strewn all over the bone group from the shoulder eastwards to 1.05 m. from the back of the skull.

The parietal top of the skull 1.50 m. from peg a in the direction S 10° W and 41 cm. below the peg. The whole heap of bones nearly horizontal.

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Skeleton XVI. (Chen).

A horizontal skeleton in a strictly N-S direction, head to the north. The head resting upon its left side, twisted so that its occipital base is turned NW.

At the foot-end a piece of thin-walled pottery, 5 cm. north from the head a pot obliquely turned towards WNW.

The base of the head 2.6 m. from peg 12 in direction N 13°E. The right upper side of the skull 30 cm. above peg 12.

Skeleton XVII. (Chin).

Only the upper half of the skeleton remaining, the lower half cut away by previous excavation by the farmers.

The skull 1.10 m. from peg 12 in direction NW. The parietal region 20 cm. above zero.

Direction of the skeleton N 15°E (head)—S 15°W. Nearly horizontal, the head however slightly lower than the rest.

Head with the parietal region turned upwards, face towards north, which may indicate that the body was laid on its ventral side. Compare skel. IV.

Skeleton found by policeman.

Skeleton resting horizontally upon its back. Lower half of legs cut away by previous excavation. No trace of head. Costae, pelvis, arms and upper part of legs preserved.

Direction W 30°N (head)—E 30°S.

Skeleton XVIII and XIX. (Chen). Map XXIII.

Two skulls close together with various bones on either side.

The left eye of the northern skeleton is 2.38 m. from peg c in the direction E 23°S. Highest part of the skull 3 cm. below zero.

The bones approximately all on the level, 10-12 cm. beneath the highest part of skull N.

Skeleton XX. (Chang). Map XXIII.

A nearly horizontal skeleton.

The skull 1.85 m. from peg c in the direction W 5°N. The top of the skull 17 cm. below zero.

Under the eastern humerus a small pot with wide mouth lying on its side. Uppermost part of this pot 30 cm. below zero.

Skeleton XXI. (Li).

A skeleton in quite horizontal position. W 30°N (head)—E 30 S. The skull rested upon its right side with the face towards W 30°N. The skull 6.95 m. from peg c in the direction W 10°N. The top of the skull 10 cm. below zero.

The bone heap is very regular, 25-30 cm. broad. Visible length 1.54 m., the feet missing. In the place of the feet a striped potsherd. Round the head were found numerous small beads.

Skeleton XXII. (Chen). Map XXIV.

The point of the skull from peg c 1.37 m. in the direction S 38°E. Top point of skull 8 cm. above zero, other bones and pottery 20-30 cm. lower down. ✓

When digging underneath skeleton 22 and in a northerly direction Chen found stonebeads and a great many minute bone plates (also in whole groups, as they were lying in situ). Also some human bones. Position of all these things: 1.10 m. from peg c in the direction E 15 S, 72 cm. below zero.

It is possible that these objects all belong to skeleton XXII.

Skeleton XXIII and XXIV. Map XXIV.

Two skulls and two mandibles with several other bones, one pot and several small artifacts, the whole forming a rather puzzling aggregate.

Eastern head nearly vertical, slightly turned to the south facing west. Western head resting on its right side, parietal region turned south. The mandibles standing nearly vertical.

Mouth of the pot turned ENE and slightly downwards. The top of eastern skull 0.82 m. from peg c in a SW direction and 20 cm. below zero.

W. from this main group two femora and together with them a stone chisel and green beads.

Skeleton XXV. (Chin).

The lower part of a skeleton: pelvis and legs resting horizontally upon the dorsal side, direction W, 10°S (pelvis)—E 10°N (foot-end). From peg c 1.30 m. to pelvis in the direction W 5°S. Pelvis 91 cm. below zero.

This skeleton may possibly belong to the same burial as the flint-bone-knife and associated objects.

Below the pelvis were found several miniature imitations in bone of *Cypraea moneta*.

Additional notes.

In this part of the burial site a number of isolated finds were made which could not with certainty be referred to definite skeletons:

1. The flint-bone-knife 1.90 m. from peg 0 in the direction W 10°N 90 cm. below zero. /c
2. Policeman's two pots: 4.95 m. from peg 0 in the direction E 40°N. Both pots standing upright. Their mouth 10 m. above zero. cm.
3. "Police" potsherd: 1.50 m. from peg 0 in the direction N 10°E 30 cm. above zero. /0
4. "Li-Mafu pots" 1.0 m. from peg 0 in the direction W 15°N. Both pots lying upon their side. Uppermost parts of the pots 12 cm. below zero. /c
5. Skull underneath "police" pots 5.05 m. from peg 0 in direction NE. The uppermost part of skull at zero level. The pots immediately above skeleton XXVI. ✓

Skeleton XXVI.

Uppermost part of skull at zero level 5.05 m. from peg 0 in a NE direction.

Additional notes. 14 10.

1. "Police" pot 1.38 m. from peg c in the direction N 37°W. Highest part of pot 49 cm. above zero.
2. Chang's pot fragment 3.20 m. from peg d in the direction S 24°E, 97 cm. above zero.
3. Chen's large pot 2.62 m. from peg d in the direction S 5°E, 67 cm. above zero. Standing upright.
4. Chang's pot 3.65 m. from peg d in the direction S 42°E, 55 cm. above zero.

Skeleton XXVII. (Chin). Map XXIV.

Parts of a skeleton very confusedly mixed and associated with one black and two (?) red pots.

Skull resting upon left side with base to the east. Its upper side 63 cm. below zero. Mandible on a level with skull. Centre of skull 3.1 m. from peg 0 in the direction N 37°E.

Difference in level between highest and lowest part in group 40 cm. E. red pot rests upon the upper part of skull. Base of W. red pot (standing) on a level with uppermost part of skull. Mouth of black pot (turned downwards) on a level with lower side of skull.

Skeleton XXVIII. (Li).

A long narrow skeleton in the direction N 12°W (head)-S 12°E.

Uppermost part of skull 2.64 m. from peg 0 in the direction N 7°W/22 cm. below zero.

Only the skull preserved.

Additional notes, 15/10:

1. Police's pot in two pieces: 2.30 m. from peg c in the direction N 30°E. Bottom of pot 14 cm. above zero.
2. Police's pot-base: 2.37 m. from peg c in the direction N 28°W, 15 cm. above zero.
3. Police's black potsherd: 2.15 m. from peg c in the direction E 35°N, 35 cm. above zero.
4. Li's potsherds 1: 1.60 m. from peg d in the direction S 43°W, 31 cm. below zero.
5. Li's potsherds 2: 1.30 m. from peg d in the direction W 35°S, 7 cm. below zero.
6. Police's afternoon-pot 1: 0.95 m. from peg c in the direction E 33°N. Uppermost part 6 cm. below zero. Standing upright, turned 30° SW.
7. Police's afternoon pot 2: 3.20 m. from peg c in the direction N 15°E, 40 cm. above zero.
8. Li's afternoon pot: 2.30 m. from peg d in the direction W 30°S, 16 cm. below zero.

Skeleton XXIX. (Chen). Map XXIV.

Two skulls, one upper (上) and one lower (下) with one mandible and several other bones. Also one pot, one pot-neck and two small sherds.

Centre of skull (上) 1.65 m. from peg d direction S 32°E. Upper, left side of skull 25 cm. above zero. Neck of pot near this skull slightly higher. From this piece the whole group slopes down to the mandible, the upper part of which is 28 cm. below upper part of skull. 0.6 m. S from the main group a small aggregate of human teeth and other small bones.

Skeleton XXX. (Police).

Single skull: 3.30 m. from peg c in the direction N 18°W. Uppermost part 41 cm. above zero.

Skeleton XXXI. (Police).

A skeleton in regular horizontal position N 4°W (head)-S 4 E.

A detached piece of the skull inside the mandible.

The mandible 3.03 m. from peg c in the direction N 14°E. Uppermost part of mandible 17 cm. above zero.

Only the skull preserved.

Skeleton XXXII. (Chin).

Skeleton in regular horizontal position resting upon the back: N 8°W (head)-S 80°E.

Head 5.35 m. from peg d in the direction W 10°S. The frontal region 48 cm. above zero. Mouth open.

Skeleton XXXIII. (Chin). Map XXIV.

Skull resting upon right side, facing W. Its centre 3.55 m. from peg d in the direction W 10°S. Upper/left side of skull at zero level.

The skeleton, which is considerably dislocated, seems to be resting upon its right side. Some bones 25 cm. above the upper side of skull, some others and the potsherd 6 cm. below the lower side of skull.

Below the ribs were found minute bone-plates on a level with the potsherd. Some other bone-plates were found at the head, and careful excavation proved beyond doubt that they were not lying together but in small groups or isolated.

Skeleton XXXIV. (Li). Map XXIV.

Three skulls (N 1, N 2 and S) and various other bones.

Parietal part of skull S 2.20 m. from peg d in the direction W 20°S. Parietal region of this skull 33 cm. below zero. Parietal point of skull N 1: 37 cm. below zero. Skull N 2 53 cm. below zero.

Skeleton XXXV. (Police).

Skull 0.95 m. from peg c in the direction E 20°N. Uppermost part 20 cm. below zero.

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Skeleton XXXVI. (Chang).

Horizontal skeleton in the direction N 16° W (head) S 16° E. Back of head 3.65 m. from peg c in the direction W 35° N. Uppermost part of skull 10 cm. above zero. Skull resting obliquely on left side with eyes turned downwards in an eastern direction

Skeleton slightly dislocated. One femur moved 12 cm. southwards from pelvis. Lower half of both legs moved 15 cm. NE.

Immediately below this skeleton Chang excavated two large beads of green steatite and a number of small white beads.

Skeleton XXXVII. (Chuang).

Skeleton nearly horizontal, head slightly higher, resting upon ventral side in the direction N 6° W (head) S 6° E.

Neck of skull 3.50 m. from peg c in the direction N 10° E. Neck at zero-level, lower part of legs 20 cm. lower.

Considering the fact that often in the case of previous skeletons no toes had been observed I carefully excavated the left leg of this skeleton and ascertained that there were no foot-bones, the tubular parts of the tibia and fibula ending blindly in the soil without joints.

Only the skull preserved.

Skeleton XXXVIII. (Chin).

Group of bones in great disorder. Mandible between the sacrum and one half of the pelvis. Other half of pelvis 40 cm. to S. One femur 40 cm. E from pelvis.

The bones form a quadrilateral one metre square. In the NW corner of this quadrilateral is the mandible, which is 5.55 m. from peg d in the direction W 14° S.

Uppermost part of mandible 68 cm. below zero.

Skeleton XXXIX. (Chen).

An irregular group of bones. Furthest NW and highest an overturned mandible. 80-80 cm. to the SE and 20-60 cm. lower down a group of long bones, and together with them the lance-shaped bone-plates.

The mandible 2.55 m. from peg d in direction S 14° E. Uppermost part of mandible 0.25 m. below zero.

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Skeleton XXXX. (Li). Map XXIV.

A very irregular group of bones and pottery.

Caput femoris highest: 1.55 m. from peg d in the direction S 24°W, 48 cm. below zero. Bones and pottery 35 cm. below this level. A large bone deeper down/ 62 cm. below the same level.

The potsherds numbred; N:o 1 is not shown in the figure. It was found 40 cm. N from the big sherd N:o 2 and 43 cm. above cap. femoris.

Skeleton XXXXI.

A skull 2.70 m. from peg c in the direction S 15°E. Upper side of skull 60 cm. below zero. Skull resting upon left side facing south.

Close to the NE side of skull a small pot with interesting painted meander decor. Mouth turned obliquely upwards and to the S.

Two objects of green stone and a bead.

Only the skull preserved.

Additional notes. 17/10.

1. Chen's black potsherds. 2.90 m. from peg c in the direction W 20°N. Uppermost sherd 65 cm. below zero.
2. Chen's black upper pot/ 3.60 m. from peg c in the direction W 20°N. The pot / standing, mouth 1.10 m. below zero. Some bones 20 cm. above this pot.
3. Li's evening pot. Lying with mouth to the north.
4. Chin's pot-base: 4.68 m. from peg d in the direction W 10°S, 28 cm. below zero.

Skeleton XXXXII. (Police).

A quite regular skeleton resting horizontally upon its dorsal side. Direction W 27°N (head) E 27°S.

Head raised approx. 45°, with orbits turned obliquely upwards and to the east. The frontal part of head 1.80 m. from peg c in the direction N 10°E. Frontal part 75 cm. below zero.

Four sherds of small painted pot close behind head. Some stone beads close to and above shoulder.

Only the skull preserved.

Skeleton XXXXIII. Map XXIV.

A skull 0.85 m. from peg d in the direction W 30°S. Uppermost part of skull 60 cm. below zero. From the skull the group of bones slopes uniformly down to a large southern bone, the northern and lower end of which is 65 cm. below the top point of the skull. This bone is the same as the southern-62 bone of the plan of Skel. XXXX. Possibly XXXX and XXXXIII are parts of the same burial. §

Additional notes. 18/10.

1. Police's morning pot. 2.15 m. from front of Skel. XXXXII in the direction N 34°W. Pot resting with mouth 20° above horizon facing WNW. Uppermost part of pot 40 cm. below zero.
2. Chuang's pot. Turned upside down. Centre of bottom 2.55 m. from peg d in the direction E 5°S. Bottom 15 cm. above zero.
20 cm. E and 25 cm. below bottom of Chuang's pot a big painted potsherd.
60 cm. SE from Chuang's pot and 20 cm. below its bottom a group of sherds.

Skeleton XXXXIV. (Li).

A painted pot 2.32 m. from peg d in the direction W 12°S. Lowest part of pot 82 cm. below zero.

From this pot in the direction S 15°E an irregular heap of bones, nearest the pot a mandible, then following pelvis, costae, vertebrae and, furthest south, some long bones.

Skeleton XXXXV. (Li).

Skull resting upon left side facing ESE. Skull 0.90 m. from peg d in the direction W 25°S, and 1.04 m. below zero.

From this skull in the direction S 12°W a narrow heap of bones in disorder. Mandible 30 cm. from skull in southerly direction.

20 cm. N from head and 15 cm. higher two potsherds, one certainly belonging to the big pot Skel. XXXXIII.

§When reading Map XIX it should be remembered that the lines indicating the direction of the skeletons are only about one fifth of the actual length of a skeleton in the scale 1:100. Consequently XXXX and XXXXIII very well can form parts of one and the same burial. ✓

Only the skull preserved.

Additional notes. 19 10.

1. In the NE corner of our excavation the policeman found some small bones and also some large fragments, possibly belonging to a skeleton not noted by us. He there found a beautiful small stone axe and some potsherds: 5.0 m. from peg d in the direction E 15° N. Level 10 cm. above zero.

2. "Police" second pot: 5.60 m. from peg d in the direction E 0.41 m. above zero.

Skeleton XXXXVI. (Chin).

Skeleton resting horizontally upon its dorsal side, in the direction W 10° N (neck) E 10° S (feet). At the neck a mandible turned upside down, above the feet a skull with eyes obliquely upwards in a SE direction. The mandible 2.30 m. the skull 3.80 m. from peg d in the direction E 15° S. Mandible 0.88 m. and skull 0.58 m. below zero.

Underneath this skeleton some beads and two bone imitations of *Cypraea moneta*.

Only the skull and mandible preserved.

Skeleton XXXXVII. (Chuang).

Skull surrounded by some bones 0.50 m. from peg d in the direction E 30° S. Uppermost part of skull 22 cm. below zero. 0.26 m. from skull in the direction N 28° W pieces of beautifully painted pottery. Lowest part of this pottery on a level with uppermost part of skull.

Only the skull preserved.

Additional notes. 19/10.

3. Chin's pot. A large fragment of a small painted pot 2.40 m. from peg d in the direction E 5° S. Pot 23 cm. below zero. Underneath the pot in an E direction some large bones, probably a skeleton in an N-S direction.
4. "Police" pot-base: 5.85 m. from peg d in the direction E 10° S. 90 cm. below zero.

SUMMARY OF FIELD OBSERVATIONS ON THE CHU
CHIA CHAI BURIAL SITE.

The Chu Chia Chai cemetery offers a complex of problems which places it in a group of its own as contrasted with all the other prehistoric burial sites excavated by me. When we compare these burials with those of Yang Shao Tsun (仰韶村), (Map XVIII)/ Hsin Tien (新店), (Map XXV and XXVI) etc. we find that with the exception of Chu Chia Chai they are all quite regular. The skeletons may be resting upon their dorsal side in a nearly horizontal position, as shown by Yang Shao Tsun and Hsin Tien or form "Liegende Hocker," as in the case of the large Pien Chia Kou (二里頭) burial (Map XXIX), in all these cases they are quite undisturbed with every element of the skeleton in its proper position and with the mortuary urns standing as they were placed at the interment of the dead.

At Chu Chia Chai the burials are nearly all more or less disturbed, some of them in a very violent way. Some, as for instance Skel. IV, XII, XXVIII, XXXII/ XXXXII, are relatively undisturbed, but most of the others are dislocated in a very strange fashion. Examine, for instance, Skel. IX, Map XXIII, or all the burials, represented by Map XXIV, or read the descriptions of Skel. XXXVIII and XXXIX and you will find the picture of burials that have in some way or other been very violently dislocated.

The important question is how this confusion of bones arose. One alternative is that the confused order is original, in other words that the dead bodies were cut up and dismembered. During the early part of the excavation I worked upon this hypothesis with vivid recollections of the primary disturbed condition of the bone-heap in the Sha Kou T'un (沙溝屯), cave in SW Fengtien. In favour of this idea reference may be made to Skel. XI, in which I believe that I saw indications of the effect of fire upon one of the human bones, as was so frequently found in the Sha Kuo T'un cave deposit. But the evidence furnished by Skel. XI, is not beyond dispute and it is an absolutely isolated case; I feel therefore that it should rather be ruled out of the discussion. Another fact that might be referred to in this connection is the apparent absence of the feet in Skel. XXI and XXXVII, but I am under the impression that those small bones are among the first to be dissolved and disappear thanks to leaching by acid water, such a process having entirely removed the bones in the Ssu Shih Ting cemetery (Maps XXVII and XXVIII).

Another alternative is the possibility of later burials or rifling having interfered with graves once quite regular. I think that there is hardly any substantial evidence to support such a view. Intrusive burials or rifling would not have interfered with nearly all the graves, as is the case at Chu Chia Chai.

After considering these alternative explanations I have come to the conclusion that we have here the effect of a slight land-slide, probably caused by an earthquake of moderate strength. It is well known that Kansu is one of the most active earthquake areas in China, ranking among the principal seismic centres of the world.

In June 1923 I travelled in NE Kansu through the epicentre of the formidable earthquake of December 16, 1920. Here the whole landscape was radically altered by the movement of soil which took place on a tremendous scale as a surface effect of the earthquake upon the easily moved masses of loess. It would only need a very moderate earthquake to cause a small slide within the loess soil of Chu Chia Chai.

This explanation seems to satisfy all the actual observations: the effect upon nearly all the burials, though with widely varying intensity, and specially the crushing and overturning of practically all the mortuary urns, a feature that could hardly be explained as the work of any other agency.

THE SITES AT CH'IA YAO, HSINING HSIEN.

Ch'ia Yao (下峪) is a small hamlet in the side valley to the Hsining Ho main valley, which opens into the main valley at Chu Chia Chai (朱家寨). This side valley runs nearly north-south, and Ch'ia Yao is situated 15 li north of Chu Chia Chai on level ground in the middle of the valley (see Pl. XXX:1). A small brook, a tributary of the stream which further south flows past Chu Chia Chai (see Map X) into the Hsining Ho, passes close east of the village of Ch'ia Yao, where it flows in a channel which it has cut down to a depth of some metres. In a NE direction from the village, in the small cliffs, specially on the west side of this stream, there are several exposures of refuse from ancient dwelling-sites. Not far to the west of this stream and, in a northerly direction from the village there runs a road which has cut through a ravine of some metres depth with cliffs on

New field ... (H) 71
... were ...

Until the small collection ... in the river and road
section ... possibility
of determining whether they are all of the same age as the
grave field at the NW edge of the village, which will be described below. It is
noteworthy that a small copper object was found in one of the exposures near the
river.

The grave field that will be described here is situated on the NW side of the
village as shown in Map XI. It is bounded on the southeast by the houses of the
village, and a road passes through the area in which ancient graves had been
noticed by the villagers. On both sides of this road the loess soil had for a num-
ber of years been excavated by the villagers for the various purposes which this
soil serves in the hands of the farmer. Over an area 90 m. in length and 20-40
m. in width, the soil has been dug away to a depth of about 4.2 m. This large earth
excavation area is demarcated on all sides by a vertical cliff 4.2 m. deep. In this
cliff the skeletons 1, 2, and 6 were found. SE from skeleton 6 there used to be,
prior to our excavations, a sharp promontory formed by the high ground in the
cliff of which skeletons 0, 00, and 000 were excavated by my collector Chen before
I visited the place and began a regular survey of the site. Consequently I have
not been able to mark exactly the location of these three skeletons. This pro-
jecting tongue of high ground was dug away by us but the only result was the
finding of skeleton 5.

In the southern part of the area excavated by the farmers on the west
side of the road and close to the houses there is an isolated round pillar in which I
discovered and excavated skeletons 3 and 4. This pillar was preserved by the
villagers as sacred ground and for this reason I was not allowed to do any more
excavating on this promising site.

In the corner, west of the pillar just described, I found a small deposit of
dwelling-site refuse containing painted pottery like the Yang Shao type. An
examination of this small material will probably prove that it is considerably older
than the graves. Near this spot we excavated the very interesting skeleton 7.

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West of the big excavation area, and separated from it only by a narrow strip of high ground, there is another place where the earth has been dug away by the villagers. Here we found in the cliff some projecting bones (skeleton 8) and after continued excavation at a lower level, skeleton 9.

At some distance from the grave field here described, one of our men named Li found in a cultivated field close to the NE edge of the village a skeleton designated in my notebook and labelled as "skel. Li extra." To judge from the very interesting burial furniture, this skeleton may belong to the same period as the skeletons of the big grave field described above.

After these topographical remarks individual skeletons will be described.

Skeleton 0. A complete skeleton in horizontal-dorsal position. Head W/7°N, resting upon left side. A bone disc between the lower parts of the legs.

Skeleton 00. The chest, scapulae and humeri in regular dorsal position. Direction of the body W 20°S (head-end)—E 20°N (foot-end).

Part of the pelvis resting lower right half of the chest.

Half a mandible 8 cm. S from the right scapula.

No trace of the head but close to its would-be position two small pots.

Skeleton 000. A child's skeleton. No furniture.

Skeleton 1. Some few bones.

Skeleton 2. (Map XXXI) Regular horizontal-dorsal position. Right hand above and the left one below the pelvis. Head resting upon left side. Bottom of pots 1 and 2 level with the centrum of the head. Bottom of pot 3 level with highest point of the head.

With this skeleton were also found a sewing needle, a spinning whorl of clay and four perforated toes of sheep.

Skeleton 3. On the north side of the "pillar" a large pot with 4 lugs lying on its side. Near this pot some teeth and vertebrae as well as a scapula. Near the mouth of the pot copper buttons, also in the earth round the pot numerous very small white beads. A bead of turquoise?

Skeleton 4. On the southwestern side of the "pillar" some human bones and with them a pointed bone implement and a perforated, peculiarly shaped tooth.

Skeleton 5. Upper part of skeleton (skull and chest) intact. Lower part removed before our arrival.

Above the pelvis a red stone (hematite?) and some long bones, probably metatarsalia or carpalia of sheep? When these bones were removed, I found resting upon the left half of the pelvis two beautiful bone awls, another smaller piece of hematite and an elongated copper object or group of copper objects which were preserved in toto.

The vertical position of the skeletons is marked in relation to a Zero point (O) close to the west side of the road. The positions of the skeletons above this point were as follows.

	Above Zero	Below Surface
Skeleton 1	1.15 m.	3.05 m.
" 2	0.8 m	3.4 m.
" 3	1.15 m.	2.75 m.
" 4	1.8 m	2.4 m.
" 5	1.5 m.	2.93 m.
" 7	0.75 m.	3.45 m.
" 6	1.2 m.	3.45 m.
" 8	1.55 m.	2.25 m.
" 9	1.15 m	3.05 m.

In the second column I have indicated under the heading the depth of each skeleton below the surface. These were before the village began their latest excavation. It will be seen that the depth varies between 2.25 m. and 3.45 m. To judge of the relative antiquity of other burial sites, it is unlikely that the burials were made more than 1000 m. or more probably that about two metre's thickness of earth has been accumulated at burial ground, probably through the gradual accumulation of material during comparatively recent times.

SITES AT THE VALLEY OF THE RIVER

Hsia Hsiang village is in a small valley (Chi Yeh) and situated on the left bank of the river. In a direction from Chi Yeh on the left side of the valley. West of Hsia Hsiang village flows the main river of the valley. NE. from the village and at the E bank of the river we found the remains of a dwelling-deposit from which a small collection was made.

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button, a funnel-shaped copper object with three triangular holes in the side wall, a rectangular copper object, a "razor" of copper and another copper object.

ADDITIONAL NOTE TO THE CHIA YAO/HSIA HSI HO AREA.

In the later part of the summer of 1924 I sent my collector Chuang alone to continue in the Hsi Ning Ho valley our search for prehistoric sites commenced in 1923. He reported some few new graves at Chia Yao and at Hsia Hsi Ho and furthermore a burial of the Chia Yao type at Pao Chia Chai about five Li NE from Chu Chia Chai.

For reasons which are fully explained below in the small chapter "Chuang's reported finds in Nien Po Hsien" there are reasons for doubts about Chuang's report, at least at one point. Still I reproduce ~~here~~ his childish plans for the value they may have as recording the finding circumstances of objects which themselves offer considerable interest.

CHUANG'S REPORTED FINDS IN NIEN PO HSIEN.

In the later part of the summer of 1924, when I went north from Lanchow, in order to investigate Pai's discoveries in the Chen Fan area, I sent Chuang up the Hsining River to continue our previous year's search for prehistoric sites. Upon my return from Chen Fan, Chuang showed me very rich and, in part, remarkable finds which he stated that he had himself dug out from graves, and he even drew sketches in his crude way to show the relative position of the different objects in each grave. He also brought back a large, fine material of the Yang Shao dwelling-site type, stated to have come from a place named Ma Chang Yen (馬廠峪), Loc. 2. In type this dwelling-site material very strongly resembled the collections which we had made in the large, rich Ma Chia Yao (馬家窯) dwelling site at Ti Tao Hsien (提陶縣), in the T'ao Ho (陶河), valley. When after my return to Swiden all these materials were being carefully studied in the Museum of Far Eastern Antiquities, our technician Mr. Gustafson discovered one day, that ~~some~~ ~~of~~ ~~the~~ ~~materials~~ ~~which~~ ~~he~~ ~~had~~ ~~found~~ ~~at~~ ~~Ma~~ ~~Chang~~ ~~Yen~~ ~~exactly~~ ~~resembled~~ ~~some~~ ~~which~~ ~~I~~ ~~had~~ ~~brought~~ ~~in~~ ~~the~~ ~~early~~ ~~part~~ ~~of~~ ~~that~~ ~~summer~~ ~~from~~ ~~Ma~~ ~~Chia~~ ~~Yao~~. There is no doubt therefore that Chuang, who had otherwise conducted himself very well, had in this case fallen a victim to the temptation

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A Approx. N

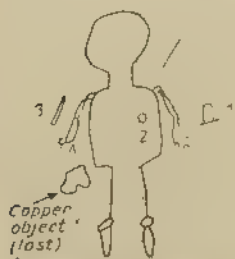


Fig. 17. Hsueh Hsien,
Chi Yao Site, Chi

A Approx. N



Fig. 18. Hsueh Hsien,
Chi Yao Site, Chi

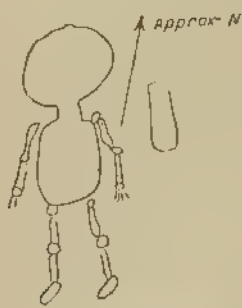


Fig. 19. Hsueh Hsien,
Chi Yao Site, Chi

A Approx. N



Fig. 20. Hsueh Hsien,
Chi Yao Site, Chi

A Approx. N

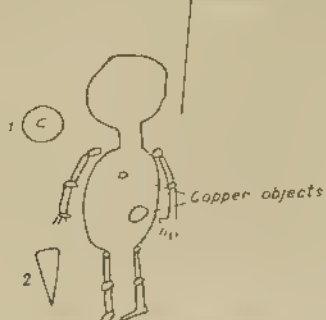


Fig. 21. Hsueh Hsien,
Chi Yao Site, Chi

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of pretending to have found a new rich site by returning to Ma Chia Yao there collecting an additional material which he alleged had come from Ma Chang Yen (馬長延, in Nien Po Hsien (新陂縣)). All his material, which was already labelled Ma Chang Yen, has now been incorporated in the large Ma Chia Yao material.

There remain Chuang's reported diggings in graves, some in Nien Po Hsien, some in Hui Ning Hsien (會寧縣). To judge from the finds there is every likelihood that the objects in question may have been found all together. Consequently I have considered myself fully justified in reproducing his drawings, childish as they are. As far as the grave finds are concerned, it is possible that he has acted quite *bona fide*. Still, the Ma Chang Yen affair certainly throws a shadow of doubt over all this material.

According to the crude sketch forwarded by Chuang (fig. 22, 23) Ma Chang Yen is a place on the south side of the Hsining Ho. On the west side of the Tatung Ho (大通河), near the junction of the two rivers, there is a large place named Hsien T'ang (鮮塘). The distance from this place to Ma Chang Yen is stated by Chuang to be 5 li.



Fig. 22. Sketch map showing the location of Ma Chang Yen.

10 li SW from Ma Chang Yen there is, according to Chuang's report, a place named Mi La Kou, Hsien T'ang (馬拉口, 鮮塘), from where Chuang presented some material.

Fig. 23 gives the position of the different sites near Ma Chang Yen.

Loc. 2, close to the SE of the village, we have discarded as spurious (see above).

Loc. 1 produced a dwelling-site material of the Hsien T'ien age resembling that of the Hui Tsui (會水), site.

Loc. 3 yielded two graves of the Tsu Wa (蘇瓦), type.

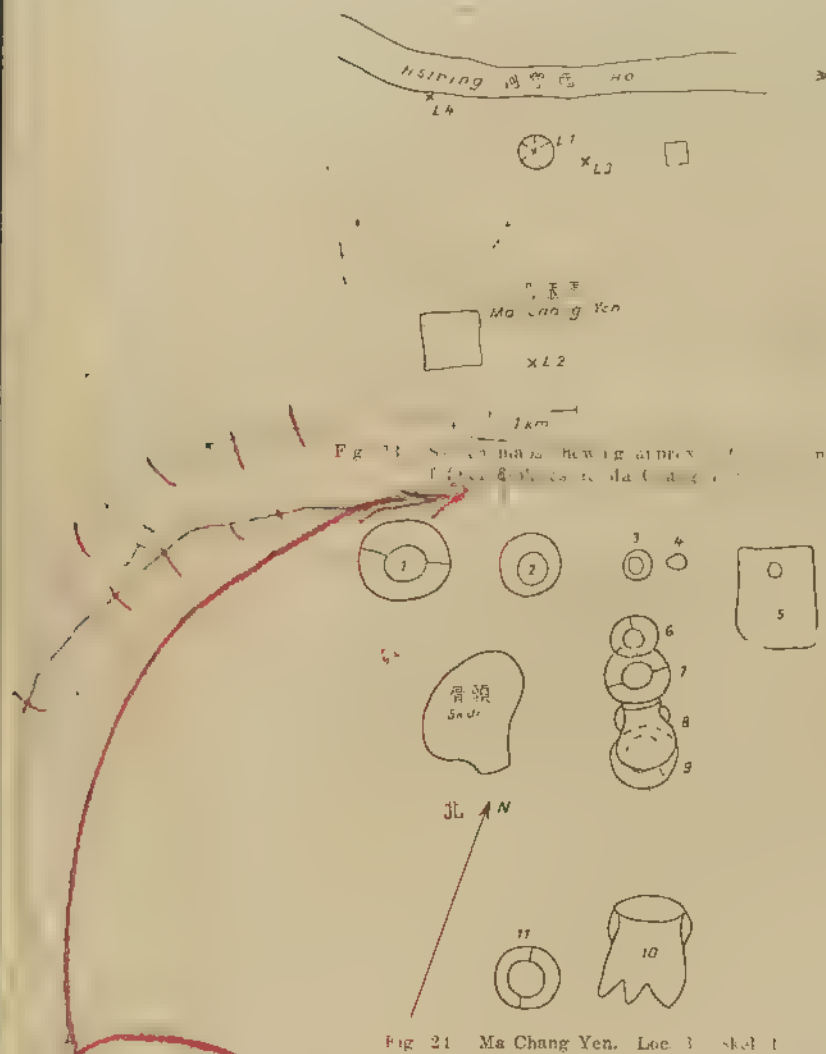


Fig. 21. Ma Chang Yen. Loc. 1. Skel. 1.

Loc. 4 yielded two graves of a type that seems to have succeeded in time the late Yang Shao burials. Mortuary urns of this type were bought by me in large numbers, but I never had an opportunity of excavating any graves dating from this period. Under these circumstances I decided, when still in the field, to name this period Ma Chang after the village of Ma Chang Yen, from which Chuang

had brought two rich grave-finds of this type. Now that his default in connection with Loc. 2, has been proved, this nomenclature is apparently rather doubtful. It is very desirable that a trained archaeologist visiting the Hsining Ho valley should undertake to examine critically the reported Ma Chang Yen sites.

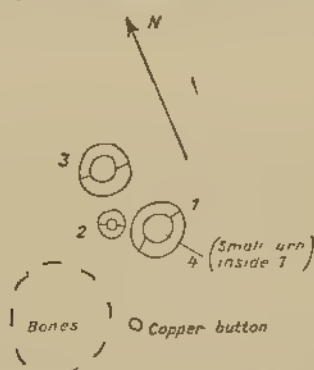


Fig. 25 Ma Chang Yen. Loc. 3 Skel. 2

I conclude these remarks by giving below some brief notes based on Chuang's plans of the four Ma Chang Yen graves:

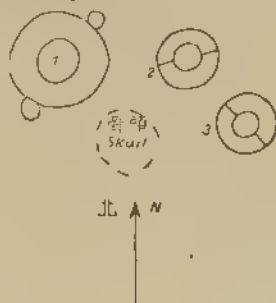


Fig. 26 Ma Chang Yen Loc. 4 Skel. 1

Loc. 3. Skel. 1. Round the skull not less than 11 pots of Ssu Wa type and a rectangular thin stone axe with a hole near the upper end. Pot 6 was said to have been standing upon pot 7 and pot 8 upon pot 9.

Loc. 3. Skel. 2. Near the bones (head) four urns of Ssu Wa type (N:o 4, on the top of N:o 1), and a copper button.

Loc. 4. Skel. 1. To the N. of the head three urns of Ma Chang type.

Loc. 4. Skel. 2. To the N. of the head four vessels of Ma Chang type.

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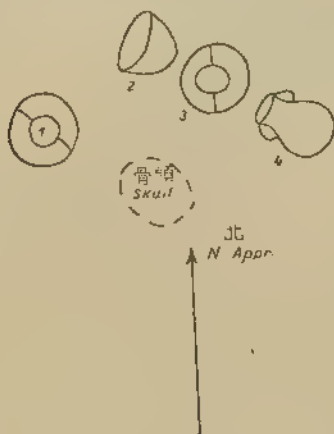


Fig. 27 Ma Chang Yen. Loc. 4. Skel. 2

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KOKONOR (CHING HAI).

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Kokonor is one of the large salt lakes of Central Asia. It is located at an altitude of 3205 m. (Filchner 1933) above sea level in a basin without visible outlet and bounded by mountain ranges, the one to the north being rather low and separating the basin from the Hsining Ho valley, the one to the south forming the divide towards the Huang Ho drainage system. To the west the country rises towards the Tsaidam area, and from the southeastern corner a broad open valley leads up to rolling grasslands, which are abruptly cut by the thousand-metres deep canyon of the Huang Ho.

With a light caravan of riding ponies and pack-mules I travelled in this area July 26—Aug. 13 1923, entering the Kokonor basin from the upper course of the Hsining Ho. I went all round the lake along its northern, western and southern shores, making a somewhat lengthy stay at the southeastern corner of the lake. From here we travelled southeast over the rolling grasslands until we reached the edge of the Huang Ho canyon.

My aim during this trip being exclusively to search for prehistoric settlements, I could make only very scanty topographical notes. Still, my personal impression of the Kokonor basin is worth relating as it affords some sort of background to the prehistoric sites here recorded.

The length of the lake is km. in a WNW-ESE direction, with a maximum width of km. The area of the lake is approximately sq. km.

Along the north shore there is a relatively broad coastal plain, where we found a rich steppe vegetation and flowing water in abundance. Here we saw all round us numerous herds of the Tibetan wild ass, the Kiang (Yeh Ma in Chinese). On one occasion we estimated the number of animals round us at 200. Sometimes they came within easy range of our rifles. In addition there were groups of antelopes, which were very swift and shy. The vision of this rich mammal life gave me the impression of Palaeolithic times, when Man hunted among herds like these. There is no doubt that Neolithic Man, whose remains we located in a couple of sites in the Kokonor basin, came here principally for hunting big game, possibly also for catching the fish for which this lake is famous.

The southern shore is quite different from the northern one. Here the mountains rise close to the lake, leaving only a narrow strip of coastal plain or slope.

The scenery at the eastern end of the Kokonor is strange and varied. The northern part of the eastern shore is covered with sand dunes. Personally I only touched a small part of the dune area, but from a distance it looked as if the higher sand hills were over a hundred metres in height. Tafel, who passed along this shore, estimates the height of the dunes at the extravagant figure of several hundred metres.

The southeastern end of the lake is bordered by a lagoon landscape that will be described later on.

At our first camp, near the dune area, we found, where the sand was blown away and its pebble-strewn substratum exposed, fragments of reddish pottery, closely recalling Yang Shao types. Most of the fragments were thick-walled, but occasionally we also found thin-walled sherds. Together with the potsherds there was a splinter of quartz, which seemed to have been chipped by human action. In addition, we found fragments of earthen discs.

Like these, mostly consisting of pottery, were encountered in several places all along the shores of Kokonor. But as no painted pottery was discovered, these finds remained inconclusive.

Only in two localities of the Kokonor area did I locate what may be called a small prehistoric site.

From our third camp I noticed in a northerly direction, at the foot of the hills, some light patches, presumably sand dunes, where I expected to find prehistoric objects. A visit to the spot richly fulfilled my hopes. Among the small dunes I soon found numerous flint flakes, and at one spot these were so numerous that there may have been a veritable workshop for preparing flint-implements from some local source of this treasured raw material.

At two spots in this locality I came across small stratified deposits with artifacts. One of these I named "The pillar" (Pl. XXXII:1 and textfig. 28.), a

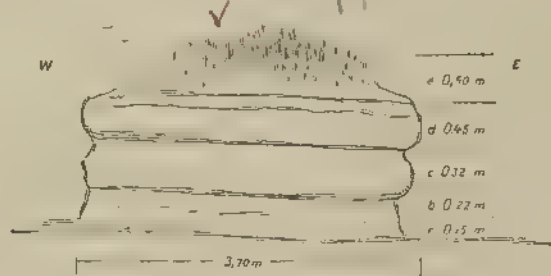


Fig. 28. Kokonor. N. of Camp III. "The Pillar" ✓

small remnant of a former deposit which had otherwise eroded away. The "pillar" was 1/65 m. high and 3, 7 m. in length. It consisted of five layers counted from *a* to *e*. The bottom layer was yellow barren sand. The top layer *e* was blown sand, grasscovered at the top and containing some few artifacts. The main harvest we obtained in the sandy layers *b-d*. The whole pillar was systematically dug through and we were very fortunate in finding here a shard of typical painted Yang Shao pottery, proving that those skilled people of the Late Neolithic extended their excursions to this locality, there to hunt the Yeh Ma and the antelope, possibly also for the purpose of searching for the rare and highly treasured flint.

In this deposit we also recovered a bone knife with a deep groove all along one edge, formed by fitting a series of small flint flakes to form a cutting edge.

The other locality, which I named "the river section," as it was exposed by the cutting action of a small stream. Fig. 29, illustrates the condition of this spot.

- The bottom layer *a* consists of sand with a strong current-bedding.
b is regularly stratified sand.
c is stratified clay and sand.
d sand without any visible stratification, but at the bottom (*d*) the sand is black and contains artifacts.
e is blown sand.

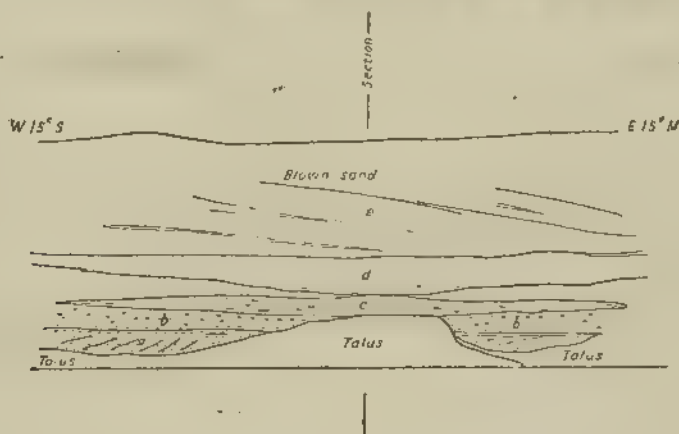


Fig. 29. Kokonor. N. of Camp III. River-section.

Ever since my arrival in the Kokonor basin I had devoted much attention to the problem of the changes of level of this large salt lake in past periods. As far as I could observe, the pass through which I entered the basin when coming from the Hsining Ho valley is the lowest outlet from the Kokonor area towards the Hsining Ho and Huang Ho valleys, viz. the valleys with a normal drainage to the sea. According to my aneroid observations this pass is m above the present level of the lake. On the 27th July I returned to this pass in order to make a close examination of the local conditions. At the place where the road between Hsining Ho and Kokonor crosses the divide it passes over solid rock ground, but further east the pass is filled with blown sand, and there is a possibility that, if this sand deposit were removed, the rock barrier here would prove to be slightly lower than at the road. However, there is no indication whatsoever that the sand deposit hides a seepage of water from the salt lake toward the Hsining Ho.

On the northern side of the big lake there is a small lagoon named Karanor. This is the only spot all round the lake where I found small pebbles as high as approximately 10 metres above the present water level. However, there is a possibility that these minute pebbles were washed along by water flowing down from the hills across the coastal plain. Along the whole extent of the northern side of the lake I did not notice any indubitable evidence of the lake surface having ever been at a higher level. But on the southern/relatively steeper slope/I could follow over large distances a very marked littoral wall or eroded terrace, 3.3 metres above the lake surface. At the southeastern end of the lake (my camp XII) I encountered conditions (fig. 30), which deserve to be related in full:

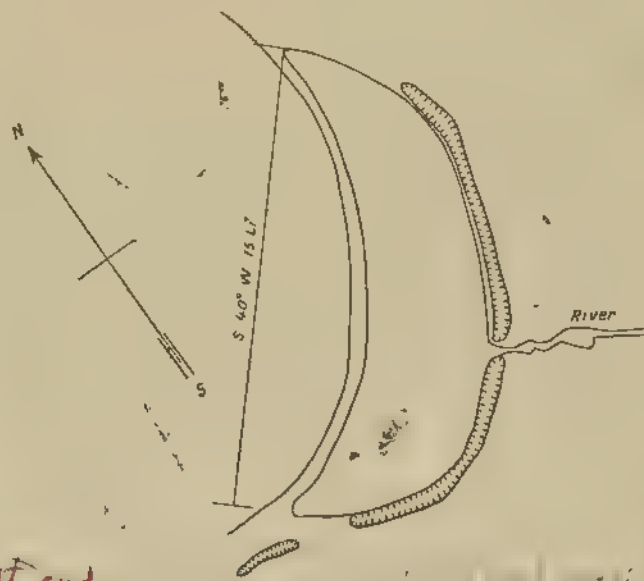


Fig. 30. East end

Upon our arrival at camp XII on the 9th August I noticed nearby some sand hills rising slightly above the ground. When visiting the place on the morning of the 10th I found that the lower and main part of the ridge was in fact an old littoral wall of Kokonor 800 m. in length. Behind the western part of the ridge is a quadrilateral wall (fig. 31). The easternmost part of the ridge is occupied by a defence-wall encircling an oval area (fig. 32). This wall is in its present state not more than a metre high on the southern (landward) side of the ridge. On the

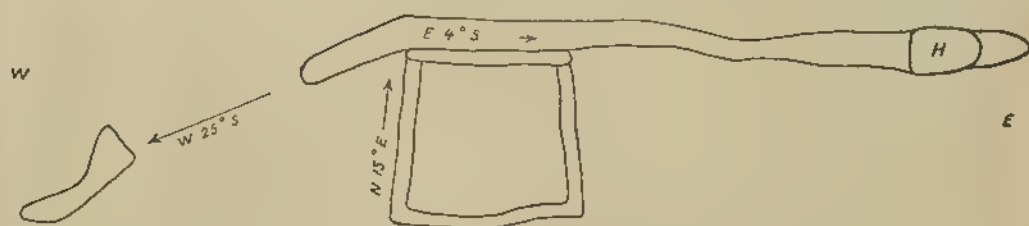


Fig. 1 E. end of Kokonor. Raised beach with "kurgan," Approximate scale 1:5,000.

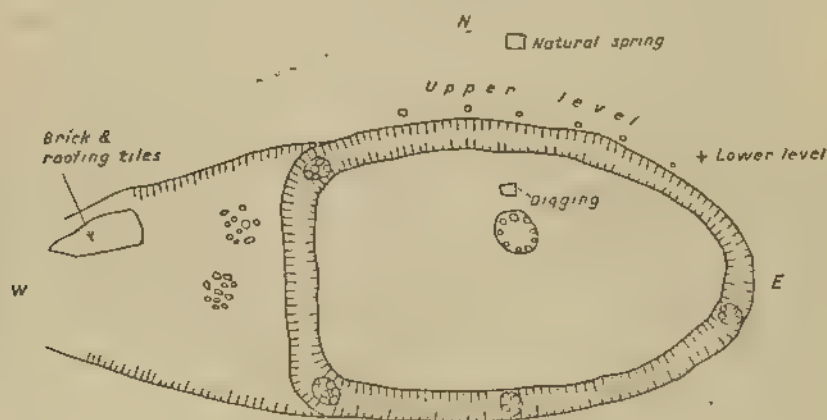


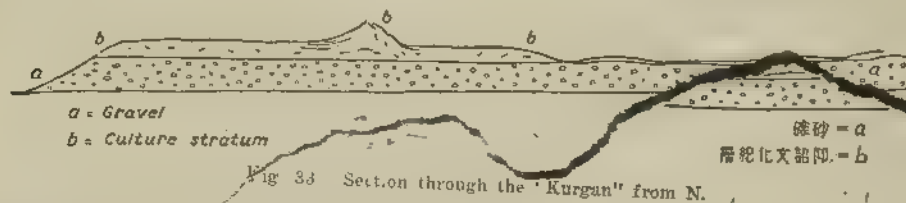
Fig. 2 E. end of Kokonor. The "Kurgan" Scale 1:500.

northern side, which turns towards the lake, it is still more insignificant. At the two western corners, the southern long side and near the eastern apex, there stand upon the wall small cairns of stones, probably built in quite recent times. In northern half of the level area enclosed by the wall there is a small circle of stones, probably also built recently. In this walled-in area there are furthermore some spots covered with stones on level with the ground. Close to the west of this wall there is a couple of stone heaps rising slightly above the ground. They may possibly be graves. A little further west, on the northern side of the ridge, is a spot covered with roofing tiles and broken bricks, the whole evidently brought there relatively recently from Chinese territory.

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Apparently this spot has been inhabited repeatedly during widely different times, and forms on a very small scale a kind of "kurgan" with about two metres of cultural deposit forming a top to the littoral wall of ancient Kokonor. However, the deposits of prehistoric type seem to occur only upon the northern side of the ridge facing the lake. Inside the walled-in, oval area I excavated at a spot marked D. The digging went down to a depth of 1.34 m. the uppermost metre consisted of loess-like soil containing a few large bones and a fragment of a big grey earthenware vessel of relatively modern type. Below this stratum we dug down a further 0.34 metre in coarse pure littoral sand.

In the northern slope of the ridge we found cultural deposits at two levels (fig. 33), an upper one 7.2 metres above the water level. Here we found bone



splinters and monochrome potsherds, but also a fragment of an axe carved from a deer's antler. In the lower level, six metres above the water were found in black earth, in addition to bones and monochrome potsherds, two bone implements.

The height of the highest part of the ridge with its cultural superstructure is 8.25 m. The highest deposit of littoral gravel and sand is 5.75 m. As stated above, the prehistoric finds were made at two levels, a lower one, 6.0 m., and the upper one 7.2 m. All these figures refer to water level in the marshy ground just outside the ridge. A hundred metres further out this boggy area passes into the open water of the water level of Kokonor. If we add to the above figures one metre, there is ample allowance for the height of the finds above the level of Kokonor.

The littoral gravel observed in this ridge to a height of slightly more than six metres above the water level of present day Kokonor is the highest trace of littoral erosion or the shore of this lake. This littoral gravel is covered by cultural deposit containing pottery of prehistoric type. It is true that no pieces of painted Yang Shao ware was found on this site and that consequently the age of the cultural deposit should be fully determined. Nevertheless it seems probable that the

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Our descent began. We were walking upon the steep cliff of the soft, easily crumbling Kueite marls. The tiny track wended its way in sharp zigzag turns. Certain spots where the road crossed layers saturated with alkali and gypsum were specially dangerous for the pack animals, who anxiously sought to avoid the water-soaked salt-clay.

Finally we came down to firm ground and a gentle slope. We had reached the gravelly bottom of the valley. At three o'clock in the afternoon we stopped at the cultivated terrace which we had seen from the edge of the plateau, and encamped in the narrow strip of wood at the base of the terrace cliff. To us who had grown accustomed to the barren steppes of Kokonor this camp was a veritable idyll. Our tents were pitched among lofty trees and bush enlivened by numerous small birds, and a brook with clear good water flowed close by the camp.

When we climbed to the rim of the terrace, we looked out over a stretch of cultivated land where the harvest had just begun. Not far from the spot where we were standing we saw the solidly built houses of the small village that occupied this strip of arable land. From the people passing by we soon learnt that the inhabitants of the place were all Tibetans who had abandoned the nomadic life and turned to agriculture. The name of the village is in Tibetan *Gomi Tanju* and in Chinese *Lo Han T'ang* (羅漢堂). I have tried to trace the village *Gomi Tanju* on Filchner's map in Petermanns Mitteilungen, Ergänzungsheft 215, Blatt 1, and arrived at the conclusion that it is most likely the place named by Filchner *Tscha-ghomi* at the stream *Tughallyk*. The distance from this place to Kueite city is 18 km. I am under the impression that the site *Lo Han T'ang* should have in our map III been moved 7 mm. ESE, to the E of the small stream. In this case the distance to Kueite had been only 19 km., what has coincided very well with Filchner's map.

Soon after our arrival my collector Chen reported the occurrence of potsherds at the edge of the plateau. Together with him I searched the place and found sherds of prehistoric type all along the edge for a distance of a hundred metres. Where the road leading to the village climbs to the plateau we found a place where a small excavation could be made. The deposit had a length of 6 m. and a width of 2 m., and the layer of cultural soil was 0.7 m. thick where it was best developed. The deposit consisted of pebbles intermixed in a loesslike matrix containing potsherds and bone-splinters. A perforated stone knife was also found here.

The cliff at the top of which this deposit was found runs in a N-S direction. It is about 20 m. high and consists in its lower part of Kueite beds, in the upper of river gravel.

This small site I have named *Lo Han T'ang village* (*Lo Han T'ang West*).

On the 16th August, when we were encamped at Lo Han T'ang village, Chen heard from a Tibetan of the existence of a place only a couple of li from our camp in a NNW direction on the other side of the valley, or a place where good prehistoric pottery was to be found. He visited the place on the following day and found it very promising. On the 18th we all worked there and found that the yield from this site would be far beyond our highest expectations. Above all, there occurred here painted pottery of Yang Shao type in larger number and better quality than anything we had so far encountered in NW China. This place which is located 3 li N 35 W from our camp at Lo Han T'ang village, I have named *Lo Han T'ang West*. The surrounding of the site are shown in map IX, surveyed on the scale of 1:5,000 with 10-metre equidistant contourlines.

We worked at the excavation of this deposit during two different periods, August 18-19 and August 29-Sept 10.

In the eastern part of the map we see a narrow triangular spur separating the main valley through which we came down from the Tibetan grassland, from a side valley on the western side of which the site is located. The village of Lo Han T'ang is situated on the eastern side of the main valley, SE of the area shown on the map. The terrace upon which the village lies once formed together with the said spur the Malan river plain of the main valley.

During our second and longer stay we settled down nearer to the site at the spot marked Camp on the map. This camp I selected as the zero point of the survey. From my aneroid readings I estimate the altitude at approximately m. above sea level.

The surroundings of the site consist of these four physiographical elements:

- 1: The modern river-plain, relatively flat, gravel-strewn, sloping down-stream at a gradient of about 1/30.
- 2: The precipitous cliffs of the Malan terrace with a height of 20-30 m. In many cases, as for instance the eastern side of the big spur, this cliff is nearly per-

pendicular. Its lower part everywhere consists of the Kueite beds, the upper of gravel and loess-like material. Thus below the site here in question the lower two-thirds of the cliff are formed of the clays of the Kueite series, whereas the upper one-third is gravel with a cap of about six metres loess-like material, possibly a redeposition of the Kueite beds.

3. The Malan terrace plain, best shown upon the eastern spur of the map. The site itself is also part of this old river plain.
4. The steep, richly dissected hill slopes rising above the Malan terrace-plain. Only some of the adjacent hillslopes, rising on one side above the Malan terrace spur, on the other above the prehistoric site, are indicated on the map up to heights of 100-150 metres, but these dissected hills, which are built up throughout of the Kueite clays, rise in many places to much greater heights.

As already stated above the place where once the people of the Yang Shao time lived is part of the old Malan surface. In fact, the narrow space occupied by the site forms an island of Malan ground surrounded everywhere by precipitous cliffs or steep slopes. As stated above, the cliff facing the modern river-plain is 31 m. high and nearly perpendicular. To the north and southwest the slope is also very steep. The site is most easily accessible from the northwest, but even here the slope served as a kind of natural fortification. Every indication goes to show that the topography 4-5000 years ago, when the place was inhabited by the Yang Shao people, was much the same as it is today and that this spot of the old Malan surface was deliberately chosen on account of its difficult approach.

The area of the site is located as shown on the map. Its length is 90 m. in a NE-SW direction and 55 m. in NW-SE. The level containing artifacts belongs to the uppermost loess-like stratum mentioned above. It contains very few pebbles. Its thickness and stratification can be judged from the following sections:

Section I:

- a. (uppermost) Yellowish-grey, homogeneous, unstratified, loess-like sediment with numerous grass-roots. No artifacts 0.36 m
- b. Yellowish-grey sediment, like a, but containing numerous pieces of charcoal and spots of a white substance. This is the stratum that is rich in artifacts. At top and bottom there is a thin zone where the earth is chocolate-brown as if burnt. 0.25 m.

- Section 2, in the western corner of the site:

- In the course of this excavation we came across a feature which we never met with in any other prehistoric site: apparently the bases of two kilns, probably for the firing of pottery. One is shown in fig. 36 (see also Pl. XXXIX:2). One

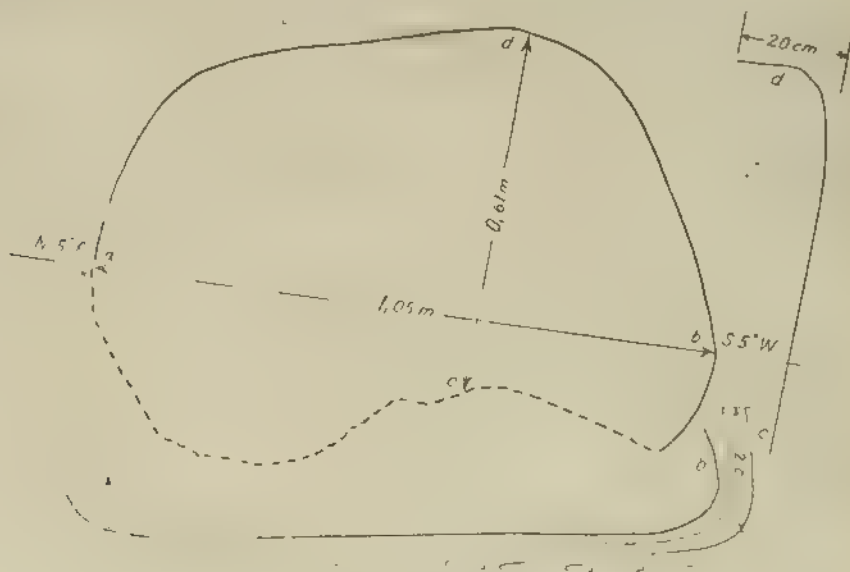


Fig. 26. Lo Hui Tang W. K. in base.

diameter is 1.05 m. Of the other one, at right angles to the first, only 0.61 m. was still preserved. The bottom and what remains of the sides (13-22 cm. in height).

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is smooth and hard packed on the inside, with some scratches on the surface. Both the bottom and the sides consisted of several layers, apparently formed in such a way that a new layer was smeared on over the inside from time to time as required. The bottom was black from charcoal soot, the sides grey. Beneath the grey surface the wall was burnt a reddish brown to a depth of 7-8 cm. Under the bottom the burning had penetrated to a depth of 11 cm., and here was a regular layer of flat pebbles, 10-20 cm. long.

The second kiln base was smaller. For the rest, it was in every feature like the big one, with the single difference that in this case the basal flat pebbles were only 7-10 cm. in length.

This is beyond comparison the richest prehistoric site that has come to our knowledge in the Kueite valley. It yielded large fragments of vessels painted in beautiful and varied patterns. Specially characteristic features are winged stone knives and roughly hewn discus-like stone objects, 10-14 cm. in diameter.

The other sites noticed in the Kueite basin are of secondary importance and can be briefly discussed.

Lo Han T'ang N. About ten li N. to E from the village of Lo Han T'ang was found a poor site upon the terrace forming the west side of the valley. The height of this terrace was estimated at 35 m. above the modern river-plain at this place. The terrace slopes down the valley at approximately the same gradient as the modern river-plain, just as is the case at the Lo Han T'ang village and at Lo Han T'ang West.

Almost everywhere potsherds were found upon the terrace for a distance of 1 km. But only at one spot along the terrace plain was there found a very thin layer of ashy earth. Here numerous fragments of large vessels (one of them with impressed linear pattern), a nearly complete small vessel and a complete, coarsely hewn crescent-shaped knife with one hole.

25 m. from this spot I noticed a small stone-covered tumulus, 30-40 cm. high and 2.0-2.5 m. in diameter. It contained a skeleton resting upon its right side in a "lienger Hocker" position. In addition to the bones only some landshells and some small potsherds were found.

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It is noticeable that the grave was located a couple of metres down the steep slope towards the cliff. This seems to indicate that the present topography was already in existence when the burial took place. On the other hand, I am not fully convinced of the prehistoric age of this burial as I have never seen a cover of stones over any undoubted prehistoric grave in China.

Wen Ch'ang Miao. W to S ten li (5 km.) from Kueite city near the temple of Wen Ch'ang Miao (文昌廟) we found a small site of Yang Shao type.

W. from this temple is a high gravel plateau, upon the surface of which we found only a very few fragments of pottery. Below this plateau, on the eastern bank of a small brook, which flows past the temple in the direction N 20°E to the Huang Ho, we found at a distance of one li from the temple a small site. In a low ridge 8 metres in length and 1-2 metres in width we came across a culture stratum consisting of rather large pebbles and gravel in a very fine-grained sandy matrix. The culture stratum rests upon gravel, sand and loess-like material in very distinct interstratification.

The culture stratum contained scattered charcoal and bones but a great number of pottery fragments, mostly of coarse thick-walled types. Some pieces of red ware with black painting in a triangular pattern as shown in fig. One square piece of pottery of a type so far unknown to me. Two sewing needles and some coarse stone knives.

In this place too the local conditions indicate that the present topography, even in small details, was in existence when the Yang Shao people lived here.

Kung Pai. (宮白). This village situated 10 li (5 km) SSW from Kueite city. Several branches of a tributary of the Huang Ho flow past it. Only a few metres above the recent river-plain there is a loess-covered terrace, and two metres above this terrace we found a stratum of dark ashy earth, its visible length 8 metres and its thickness 0.55 m.

For a distance of more than one kilometer I followed this low river-terrace down towards the Huang Ho and noticed here and there pieces of pottery, in a couple of places also small deposits of ashy earth containing the typical prehistoric pottery.

The finds were relatively poor, yet of some significance on account of the numerous clay arm-rings discovered, some of them smooth, others with a simple decoration, reminiscent of the corresponding finds from Honan. Also a slate-knife and some sherds of painted pottery.

Ho Chia Ssu. (何家寺). This site is located on the northern bank of the Huang Ho, 7 li (3½ km.) from Kueite city in the direction W 15°N. The site lies 200 m. from the bank of the river and one li S 10°E from the temple Ho Chia Ssu.

The finds were made upon a low terrace of loess-like soil, probably less than 10 metres above the water level of the river. In the loess-like soil were found large quantities of coarse monochrome pottery and a coarse stone knife. Not a single sherd of painted pottery.

TOPOGRAPHIC DESCRIPTION OF THE HSIN TIEN, SITES.

Hsin Tien (幸店) is a small market-place at the Lanchow-Titao road, 50 km. from Lanchow in T'ao Sha Hsien (洮沙縣), in the T'ao Ho (洮河) valley. The T'ao valley is here broad and fertile extending S-N. Some distance above Hsin Tien is the confluence of the main T'ao valley and a tributary valley coming down from Ning Ting Hsien.

In the main valley, 60 li above Hsin Tien is Titao (狄道). In the main valley above Hsin Tien are the sites Ch'i Chia P'ing (齊家坪), Tung P'ing (董坪), the P'an Shan (盤山) area, Ts'ao Chia Ping (曹家坪), Ma Chia Yao (馬家窑), and Ssu Wa Shan (寺窪山).

Below Hsin Tien 15 li (three li below the hsien city which is 12 li below Hsin Tien) is the Hui Tsui (灰嘴) site nearby the village Sha Lung Tze (沙楞子).

On the west side of the T'ao river opposite the T'ao Sha Hsien city is the Ssu Shih Ting (四時亭) site, five li east of the village bearing this name.

The rock ground consists of red sandy beds of the Kueite series. The beds are not far from horizontal but undulating with gentle dips. Above the red beds is in most places the loess conglomerate with pebbles consisting largely of crystalline granitic rocks. Above this conglomerate is loess with a thickness estimated to be at most 20 meters.

On the east side of the T'ao valley there is at Hsin Tien a large development of a Malan terrace of about 40-60 meters in height consisting of red beds, basal conglomerate and basal gravel superposed by loess as described above. The same terrace is very beautifully developed higher up the river at the confluence of the mentioned valley. On the west side of the T'ao valley opposite Hsin Tien there are high hills of the red beds, and the recent river erosion has almost completely cut away any traces of the 40 meter terrace. Further down, on the west side of the river, opposite T'ao Sha city the terrace is also well developed.

East of Hsin Tien, in a distance estimated to be about two kilometers, there are flat loess-covered hills which seem to form together a higher and older terrace, estimated to rise about 100 meters above the afore-mentioned 40 meter terrace. The geological and topographical features round Hsin Tien are shown by the cross section sketch (Fig. 37) below.



Fig. 37. Section across the T'ao valley at Hsin Tien

Hsin Tien, the market place, is a big village. 600 meters N of the northern end of the main village is a small group of houses Kuo Chia Chuang at the mouth of a big ravine. (Map XII).

Hsin Tien (A) is a burial site, situated on the north side of the big ravine. As shown most clearly by the 1:5,000 map, the burial site is bounded by the big ravine to the south, and in W and E by ravine roads. To the N it reaches up to the level terrace plain in an altitude of about 60 m.

A more detailed representation of this site is given in the plan 1:1,000 (Map XX) where, within the area of the grave-field, every cultivated terrace and every modern grave is shown. The three terraces south of the point (a) mark the steep slope down to the big ravine. The southernmost of these terraces is part of the nearly perpendicular cliff of the ravine. The two ravine-roads leading from the river plain (0-10 m.) up to the terrace plain (60 m.) are shown in this plan, one to the W of BM, the other to the E of point (b).

Points (a) and (b) are the orientation points for the 1:1,000 plans of the two main groups of graves excavated by us. (Map XXI). H

As shown by Map XX, the larger part of the burial place is nearly level between 43 and 46 m. altitude. The northernmost part of the graveyard is on the slope up the terrace-plain, and here we have the skeletons 21 and 24 in 48-50 m. altitude.

In the SW part of the site—the shaded area on the plan—the graves had been excavated by villagers during the weeks before our arrival. At least one hundred graves had been turned over in this deplorable manner, and most of the pots of Hsin Tien type bought by me in Lanchow certainly came from this spot. Some time before our arrival the excavation had been stopped by order of the T'ao Sha Hsien magistrate. This part of the field formed a miserable sight. The whole area was pitted, and scattered human bones indicated what had been going on.

Our own excavations were undertaken in two main areas (a) and (b), and in addition some few skeletons (18, 21, 22, 24 and 25) were found further north and east.

(a) is at the very edge of the terrace in which the villagers had made their big digging. Here a narrow strip of ground was left untouched and here nine skeletons (1 to 6 and 9 to 11) were excavated as shown by Map XXI. Near point (b) ~~ten~~ skeletons were unearthed (7, 8, 12 to 17, 19, 20 and 23). *Eleven*

There is little doubt that numerous skeletons are still left untouched in this area, especially in the eastern part between point (b), skeleton 25, skeleton 24 and skeleton 18. Our excavation was discontinued because the 25 skeletons here excavated had given us a fairly complete representation of the type of burial and the funeral pottery, whereas the finds of small objects were so utterly scarce as not to encourage continued operations.

On the south side of the big ravine, Map XII, is at (B) a dwelling site of a peculiar type. The site occupies the flat top of a hill, this flat area being part of the once unbroken level terrace plain. The area occupied by refuse deposits is 100 meters in length and 55 meters maximum in width. Also in the two nearby hills, one to the SSE and carrying a ruin and the other to the ESE, of a horse-shoe shaped contour, there were found numerous fragments of the same kind of }

pottery but in a somewhat smaller quantity. Very likely the site was extended also to the small hill W of B where however the construction of a defence fortification of the type common in the vicinity of Chinese villages, has made a close examination impossible.

Our excavations in the hill (B) were not sufficiently extensive to ascertain the average thickness of the culture deposit. At the spot on the E side of the hill near the S end, where we made the excavation referred to below no ashy earth was found below 1.33 m depth. At the N V corner, the ashy earth continues for a considerable distance down the slope. Apparently large quantities of refuse were here thrown over the edge of the steep slope.

The remarkable feature of this locality is a mingling mixture of two quite distinct types of pottery, Yang Shao and Hsin Tien. The former is perhaps in slight predominance even at the surface, but in the surface finds the Hsin Tien pottery is nearly as common. The two types stand out in striking contrast and, if occasionally a small fragment cannot be with certainty designated to one group or the other, still it cannot be said that any transition between the two ceramic types is noticed in this locality.

For the purpose of ascertaining the relationship of the two pottery types here so strangely mixed, I undertook, at the E side of hill (B) near the south end at a place where the ground is quite level and the culture stratum could be supposed, at least in the lower parts, to be undisturbed, a systematically conducted excavation over an area of 5 x 2 meters. This area was dug through in layers of 33 cm. thickness, and below the fourth of these layers, viz., at a depth of 1.33 m. from the surface, the quite barren substratum was reached.

The result of this stratigraphically conducted excavation was as follows:—

- Layer 1 (topmost) Yang Shao and Hsin Tien pottery in about equal proportions.
- " 2 All Yang Shao, except one doubtful fragment of Hsin Tien type.
- " 3)
- " 4) Only Yang Shao pottery.

From this excavation it seems evident, that the site is primarily of Yang Shao age, but was probably inhabited for some time during the Hsin Tien period.

when a layer of Hsin Tien refuse was spread over the pre-existing Yang Shao deposit. That the two types of pottery are mixed in the upper part of the deposit, as we see it today, may be due partly to the action of Hsin Tien man, but to a very large extent to that of the modern farmer who laid out the top of the hill in a level terrace and then has been continuously overturning the surface soil in his tilling operations.

A simple copper object, a round disc with a hole near the edge, which was found by my collector Chuang in his reconnaissance digging on the SW side of the hill, with our general knowledge of these periods, might be supposed to belong to the Hsin Tien component of the site.

At a point marked (C), situated 300 meters in a NE direction from (B) and about the same distance ESE from (A) on the promontory between the big ravine and a branch ravine running up in a NE direction, there was found a pocket of ashy earth in which was excavated a beautiful rectangular knife and a number of more or less complete specimens of monochrome vessels, amongst them a nearly complete high-collared vessel of small size.

The letter (D) was assigned to a place which later proved of little interest but is marked on the map.

East of the Hsin Tien main village, near the edge of the terrace plateau between two ruin compounds (E), there was found a grave which was excavated by me and one of my men. The details are shown in Map XXXI. The skeleton is of interest because of the pot which is of a peculiar new type, but very likely related to the Hsin Tien culture, and because of the necklace of beads of three different types which was found round the neck as well as a tube-shaped bone object on the right half of the chest.

When reviewing the finds at Hsin Tien we will notice that they are of three different types, marking three different periods.

First we have to mention the graveyard (A) which has been taken as a type of the Hsin Tien culture, partly because this is the place where this new type was first noticed, partly because the mortuary urns of Hsin Tien (A) form a more homogeneous group than the mortuary pottery of the Ssu Shih Ting site where we meet decorative elements reminding us both of the Yang Shao and the Ma Chang periods, together with a majority of pure Hsin Tien types.

Second we have the dwelling-site (B) which has proved to be originally a site of the Yang Shao time with a later surface addition of Hsin Tien age. The burial place of the Yang Shao part of this site is not at all known and the Hsin Tien material on the surface of this dwelling site is so small in quantity that it can hardly be considered to form the dwelling site corresponding to the big grave field (A).

Third, there is to be mentioned the small ashy earth deposit at (C) where no painted pottery, but very conspicuous types of monochrome wares were collected. Here for the first time we encountered the prehistoric stage which later in the course of our research was named after the large Ch'i Chia P'ing site.

HSIN TIEN, BURIAL SITE A.

Map XXV, XXVI.

- Skeleton 1.* Skeleton in straight dorsal position, sloping from the head towards the feet 37° . Head $N 10^{\circ} E$. 0.4 m. to the right of the head two small pots, and a single one at the same distance on the left side of the head. The widest part of the pots is on a level with the uppermost part of the skull.
- Skeleton 2.* (Figure) Horizontal-dorsal. Lower part of body missing owing to earlier excavation. Head resting on its left side. Two pots close to crown of head.
- Skeleton 3.* Two pots standing close together, one large (W), one small (E). S. of these pots were seen some bones in disorder, evidently disturbed by the recent excavations of the villagers.
- Skeleton 4.* (Figure) Skeleton sloping from the head towards the feet 27° . Skull fragmentary. Maxilla down on the chest, isolated teeth at the pelvis. The hands below the pelvis. Two small copper objects were found at the left side of the pelvis. Two pots W and one large one E of head.

In the pot (2) the earth in the lower part showed numerous small pores of equal size (sample). Possibly negatives of some kind of grain?

- Skeleton 5.* (Figure) Two pots and fragments of a skull. In one pot a small fragment of charcoal.

- Skeleton 6. Two pots close together; the larger one (1) east of the small one (2). 14 cm. S of the small pot fragment of a skull.
- Skeleton 7. and Skeleton 8. See figures.
- Skeleton 9. Two small pots, one (1) south of the other one (2). 0.5 m. SSE from the southern pot two bones (humeri?). This skeleton belongs to group A, exact position not recorded.
- Skeleton 10. (Figure) The skeleton slopes 26° towards the feet.
- Skeleton 11. See figure.
- Skeleton 12. (Figure) Horizontal-dorsal position. A small amount of red substance between the left clavicle and the skull.
- Skeleton 13. (Figure) Horizontal-dorsal position. The left humerus steeply sloping from the upper towards the lower end.
- Skeleton 14. (Figure) The skeleton slopes steeply towards the foot end, which is 0.5 m. deeper than the chin.
- Skeleton 15. (Figure) Large individual with very heavy bones... The head somewhat below the level of the pots. The skeleton dipping rather steeply towards the foot end.
- The skeleton was not fully uncovered at sunset. Consequently it was found necessary to map the protruding parts of the bones and then quickly excavate them.
- Skeleton 16. (Figure) Skeleton fairly complete but very much decayed. Horizontal.
- Skeleton 17. Photo (Pl. XLII and figure) Horizontal-dorsal. A white stone spinning wheel near the left hand.
- Skeleton 18. (Figure) Incomplete skeleton in horizontal-dorsal position.
- Skeleton 19. (Figure) Nearly horizontal: resting partially on the right side.
- Skeleton 20. (Figure) The uppermost part of the skull 0.5 m. below the level of the base of the pots. In the direction of arrow (a) some small bones, among them the sternum. In the direction of arrow (b) irregular accumulation of pelvis and leg-bones.
- Skeleton 21. Two pots, one large north and one small south (only the small pot kept.) 35 cm. south of these pots and 90 cm. deeper two bone fragments, one a scapula. 45 cm. further south and still 30 cm. deeper some rib bones.
- Skeleton 22. (Figure) Head resting directly upon the large pot.
- Skeleton 23. Incomplete skeleton (legs missing). Head N 3° W. Skeleton sloping 20° towards the feet.

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60 cm. from the skull in the direction W 7° S centre of a large pot (1) with cover-stone. North from the large pot a small one, also with cover-stone.

80 cm. E of the skull but 50 cm. higher (only 50 cm. below the earth's surface) a layer of 11 flat stones. This accumulation had an extension of 80 cm. in a S-N and 60 cm. in an E-W direction

Skeleton 24. A pot lying on its side, and 35 cm. SE from this pot the caput of left femur of a skeleton (only leg-bones preserved). To judge from these leg-bones the head of this skeleton was approximately in direction N.

~~TAO SHA HSIEN, N. 10 LI.~~ HSIN TIEN. BURIAL PLACE E.

At this place Mr. P. L. Yuan, during the topographic survey of the Hsin Tien area, had noticed some bones. At closer examination we here found a skull slightly protruding in a small terrace-cliff and we excavated a very well preserved skeleton which was complete except the cap of the slightly protruding skull. (Map XXXI).

The skeleton sloped slightly towards the feet which were 25 cm. lower than the chin.

30 cm. W from the skull a pot of remarkable type, unknown to me.

At the right humerus a little red earth.

In the lower part of the left of the chest a tube-shaped bone object.

Round the neck a large number of stone beads of three types: (1) Big beads of reddish stone, (2) Tubular, and (3) Small low beads; both (2) and (3) of white stone. All beads of Type (1) were found behind the neck.

In spite of persistent search no more skeleton material was found in this place.

THE HUI TSUI SITES.

Map XIII, Pl. XLIII:1.

During our stay at Hsin Tien (辛店), my collector Chuang (曹永成) undertook on the 1st May a reconnaissance to a village named Sha Leng Tzu (沙楞子) and situated five li W from Tao Sha Hsien (兆沙縣), city. Here he bought four vessels of Hsin Tien type, three small and one large. These may have come from

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Ssu Sih Ting (四時亭), burial site of early Hsin Tien age situated just opposite Sha Leng Tzu on the western bank of the T'ao Ho. Furthermore at Sha Leng Tzu he was directed to a place situated only one li N of the village and named Hui Tsui (嘴灰). Here he found the black ashy earth so characteristic of prehistoric dwelling sites and collected in it big sherds of thick-walled vessels with a large black meander upon a reddish back-ground.

It seemed quite probable that we had here found a dwelling site of the Hsin Tien stage. My visit to the spot fully confirmed this assumption, and I moved three of my men to Sha Leng Tzu whence they carried out extensive excavations in the Hui Tsui site. Personally I remained in Hsin Tien in order to supervise the important grave excavations going on there, but every third day I rode to Sha Leng Tzu, partly to examine the finds made by my men, partly for the purpose of carrying out the topographical survey shown in map XIII.

The village Sha Leng Tzu and the Hui Tsui site are situated just above the T'ao Ho river plain, and one of the branches of the river flows very near the village, in front of which is an elongated island. Immediately above this island I have chosen the datum point (O) of my survey. The topographical conditions of the site should be studied not only with the aid of the map but also by means of the section along the line A-B shown at the top of the map.

The road between Titao and Lanchow runs here upon a low terrace on which is also situated the village of Sha Leng Tzu. The altitude of this terrace above the datum level is 10-16 m. The terrace terminates on the side overlooking the modern river-plain in a precipitous cliff.

Above the low terrace there rises a lofty, steeply sloping terrace to a height of 70-80 m. above datum level. To the north of Sha Leng Tzu two big ravines intersect this high terrace forming a number of gullies and islands which stand as remains of the once continuous high terraced plain. The largest of these terrace islands, marked in the map with two altitude figures, 77 and 79, is the site of the ancient village of the Hsin Tien stage. By means of narrow isthmuses this central island is connected towards the SW with a very small terrace island marked by the figure 71, and towards the NE with an island nearly as big as that on which is the site. This complex of islands is surrounding below the 40 metre level. It is apparent that these islands with their steep slopes formed in ancient times a strong natural fortress and from this fact follows these two indisputable conclusions:

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1. That the people of the Hsin Tien time selected this elevated terrace island for their settlement because it was in an isolated position and could be easily defended. The inducement to settle here must have been very strong, surely strong indeed to overcome the inconvenience of carrying water and other supplies up the very steep slopes.
2. The present topography must in all essentials have already been in existence during the Hsin Tien time. This conclusion is corroborated by the discovery of a Hsin Tien burial at the spot marked *Grave* on the low terrace below the 71 m. island.

Excavations were carried out in the ashy earth all round the island. Nevertheless, only a very small marginal part of this rich site was excavated. Our findings here comprised a rich and characteristic collection of village furnishings of the Hsin Tien stage.

On the top of the island there are two modern burial grounds, one small rectangular, marked by the figure 77, and another larger, also rectangular but with a curved contour to the east, marked by the figure 79. A noteworthy feature of the excavation was the discovery on the south side of the island of a Wu Shu Han coin in the ashy earth. The find was made as shown in fig. 38, 0.8 meter beneath the

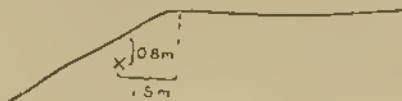


Fig. 38. Han Hsui, finding place of Han coin.

surface of the island in the slope 1.5 meters outside the edge of the island. This is only one of the several instances noted by me where objects from historical times have through the secondary action of Man become intermixed with disturbed prehistoric deposits. There may once have been on the top of this prominent island a Han burial containing this Wu Shu coin. During a much later period a farmer, in his efforts to level the somewhat hilly surface of the island, cut off the central calotte and carted the earth out to the edge where it was dumped to increase the area of the field. During this replacement of soil the Han coin became embedded in the ashy earth carrying the Hsin Tien stage artifacts.

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THE SSU SHIH TING SITE.

Maps XXVII-XXVIII.

During our stay at Hsin Tien we heard of a site just opposite T'ao Sha Hsien (洮沙縣) city on the western bank of the T'ao Ho (洮河). The place belongs to T'ao Ho Hsien (導河縣) in spite of its proximity to T'ao Sha city. The nearest inhabited place is Ssu Shih Ting (四時亭), 5 li east from this place is a ravine named Niu Chiao Kou, in the immediate vicinity of which is the site.

A large number of pots from this place were offered to us and I bought 23 of them, all more or less decidedly of Hsin Tien type. A very remarkable specimen from among these vessels is a big urn (42 cm. high) with no painted decor except upon the collar, two human figures and a bird, all reproduced from my field sketches in *Preliminary report on archaeological research in Kansu* p. 17.

At the end of my topographical survey at Hui Tsui I was bitten by a dog and was laid up for a number of days. During this time we moved into T'ao Sha city, and as I was "hors de combat" my men went alone to dig these graves. Fortunately the Korean boy Li (李) undertook to make careful plans of these graves, which proved to be relatively simple to draw owing to the fact that nearly all the bones had been dissolved (cf. Maps XXVII and XXVIII). In spite of the almost total absence of human bones the original position of the interred bodies could be approximately determined by the fact that the teeth were more or less completely preserved and the soil slightly differently coloured where the skeleton once rested.

Upon my recovery and just when the excavations at this place were completed I paid a visit to the site in company with my men.

Pl. XLIV and Pl. XLV: show this site. Pl. XLIV:1 is the most distant view, taken from the edge of the cultivated riverplain at the southern end of T'ao Sha city. The photograph was taken in the direction W 30° S. The contour sketch shown in fig. 39 gives the position of the site.

Pl. XLV:1 affords a slightly nearer view of the place, taken from the eastern bank of the main stream of the T'ao Ho in the direction S ½ W. The contour sketch in fig. 40 gives the position of the site as seen from this spot.

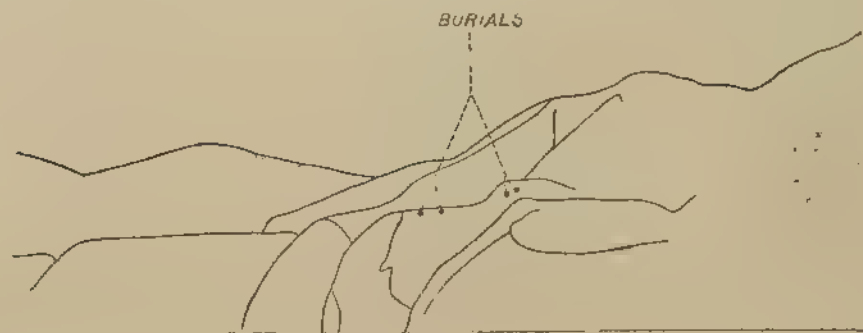


Fig. 39. Explanation to Pl. XLIV:1.

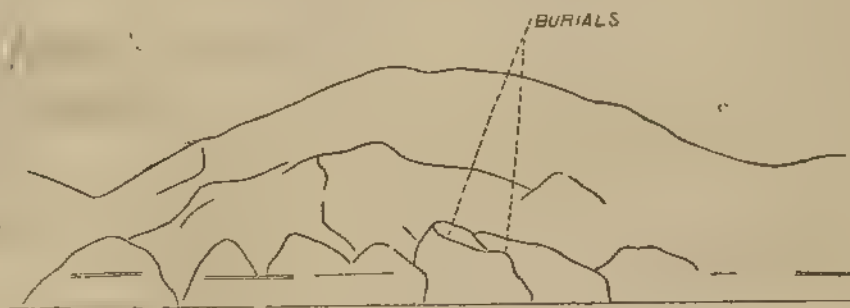


Fig. 40. Explanation to Pl. XLV:1.

Pl. XLIV:2 gives a view of the spur in which lay the graves, and this photo was taken from the slope above the spur. The marks of the excavations can be seen on the crest of the spur. In the centre of the picture is the T'ao river. In the background is the fertile land round T'ao Sha city and behind it the mighty Malan terrace.

As already indicated, the cemetery is located upon a narrow spur between two ravines. The spur is at the foot of hills rising towards the western side of T'ao Ho and it stands steeply above the western bank of the T'ao river, the course of which is seen in Pl. XLIV:2 at the foot of the spur.

The distance to the cemetery was estimated at only 2, 5 li in a SW direction from the T'ao Sha yamen.

The direction of the spur is NE (riverside)—SW (hillside). Graves were found all the way from the cliff overlooking the river upwards along the spur.

a distance of 250 m. The mean altitude of the spot above the river is 100 m. The difference in level between the lowest and the highest ground is about 10 meters. The graves were found in huang t'u (Loess) on the spur of the hill.

All the observations made by my Korean boy Li when surveying these graves are embodied in maps XXVII and XXVIII, to which it will suffice to refer. It is hardly necessary to remark that these maps, made by a very conscientious but scientifically untrained worker cannot be taken upon in the same way as the maps surveyed by me.

Only a few general remarks need be added.

The direction of the skeletons varies considerably from the head towards west to the head towards north. Possibly this varied orientation of the corpses is due to the narrow and winding spur upon which the burials have taken place. It should be remarked that the general arrangement of the graves seems to show that the spur was much the same at the time of the burials as it is today. If this conclusion is well founded, we have here the most striking evidence that the erosion in this region has been relatively slight in historical and late prehistoric times.

The mortuary furniture of these graves consist mainly of one to three urns, which as a rule are placed at either side of the head. The only skeleton with but one pot has a stone object beside the upper half of the body.

A remarkable feature of this cemetery is that five of the graves (8, 9, 10, 11 and 19) had flat discoid pebbles as covers over the mouths of the urns. These stones are marked St. in the plans.

Another unique feature of these graves is that half of them (1, 7, 8-12, 16, 18 and 20) had behind the head a closely heaped group of angular coarse stones, which are marked with dotted lines in the plans.

THE SITES OF THE P'AI TZU P'ING AREA

P'ai Tzu P'ing (排子坪) is a small village situated 35 li S of Hsin Tien, on the west side of the T'ao Ho. Between the river and the high hills forming the west side of the river there is here a terrace plateau of unusual width, about four li where it is widest.

P'ai Tzu P'ing is situated near the southern end of this plateau where it ends

at the mouth of a big ravine named Pa Yang Kou. On the south side of this ravine rise higher hills belonging to the "upper terrace."

Three li N of P'ai Tzu P'ing at the village of Ch'i Chia P'ing the northern end of the plateau is also marked by a big ravine on the N side of which rise the hills that form the higher plateau (or the still higher peneplain).

Within this area there are three sites: one in the northern part at Ch'i Chia P'ing (齊家坪), one a li distant from P'ai Tzu P'ing in a NE direction, and the third at Tung P'ing (董坪), about four li from P'ai Tzu P'ing. These sites will be named hereinafter, the Ch'i Chia P'ing, P'ai Tzu P'ing and Tung P'ing sites. That they are all situated on the terrace plateau is indicated by the character P'ing (坪), common to them all.

The Ch'i Chia P'ing site is illustrated by a sketch map on the scale 1:8,000 (Map XIV). The road which has run along the low modern ten-metre plateau on the west bank of the river for some 20 li, here climbs to the top of the Ma Lan plateau through a ravine which is shown on the map to the W of the figure 74 m. The road passes through the Ch'i Chia P'ing village, then crosses a big ravine bordering the village to the south and runs further south to P'ai Tzu P'ing. The site is situated to the N, NE and E of the modern village of Ch'i Chia P'ing. It is bordered to the northwest by the big ravine which marks the termination to the N of the plateau: to the NE where the culture deposit is best exposed the site is bordered by the steep and high cliff facing the T'ao river. To the SE the topographical conditions are rather complicated: from the T'ao river escarpment a ravine runs southwest, and a much bigger ravine, the mouth of which is at the escarpment to the east/outside the area shown on the map, nearly joins the smaller ravine just mentioned, leaving between them only a passage of uneroded plateau less than 100 metres broad. This passage leads to a lobe of the uneroded plateau, which extends to nearly a km east of Ch'i Chia P'ing, and scattered over this lobe there were also seen fragments of pottery, but no deposit of dark ashy earth was noticed here.

As shown in the map, the big western and the big eastern ravine approach close one to another west of the village where the ground rises to the high hills further SW, as denoted by the figures 114 and 125, which indicate only the gentle beginning of the upward slope.

It has already been mentioned that there are large exposures of the dark ashy earth in the big road between the figures 86 and 102. Another group of exposure is along the edge of the escarpment from the point 86 southeastward. A third group of good sections occurs in some low cliffs E of the village, one of these cliffs showing the pocket described below. Some small sections in the culture deposit were also noticed due north from the village, W of the road. Fragments of pottery were also discovered in the field N and E of the village. No diggings were undertaken in the level cultivated fields as the existing exposures offered ample opportunities for our excavations. Still, there is fairly good evidence that we have here a more or less continuous deposit extending 500 meters in the direction NW-SE and 250-350 meters NE-SW, representing an ancient monument of quite considerable dimensions.

The altitude of the deposit above the Tao river is 90-100 m. The edge of the escarpment towards the river is at a height of 80-90 metres. The higher parts of the site near the village are at an altitude of about 100 metres. It will be observed that this site is topographically located much in the same way as other sites of this area, e.g., the Hsin Tien B and the Hui Tsui sites, upon a part of the dissected plateau which is largely protected by the steep and partly inaccessible cliffs of deep ravines. But in the case the isolation from the surroundings is less complete, as there is an isthmus connecting the Chi Chia P'ing lobe with the high land in the SW. As already mentioned, there is also a level isthmus leading to a big lobe E of the village, but this lobe might be regarded strategically as part of the site as it is completely protected by the river cliff in the N and the big eastern ravine in the S.

Within this site the culture-deposit attains thicknesses that are uncommon in Kansu and reminiscent of the big refuse deposit of Yang Shao Tsun in Honan. At the river cliff, the spot marked 86 metres, a thickness of 2.5 metres was measured and two metres was noted also at a place in the southern part of the site. Here was also noticed a real pocket very much resembling those at Yang Shao Tsun in Honan.

The pottery of this site is for the most part of the coarse monochrome type, very often blackened by fire. There, though more rarely, were also found fragments of monochrome vessels of a much finer type with very attractive *impressed* patterns a type otherwise extremely rare in these Chinese sites.

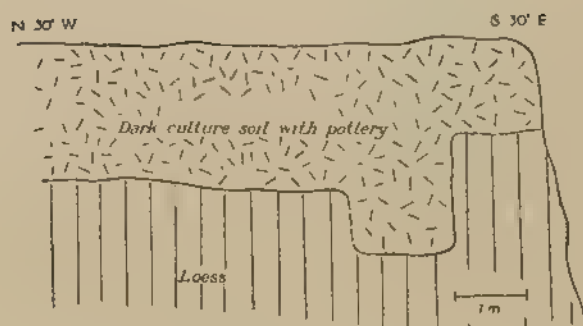


Fig. 41. Ch'i Chia P'ing. Southern part of Site. Pocket.

Several times I observed small fragments of painted pottery of Yang Shao type on the surface. These fragments might possibly be explained as a later surface addition, as painted pottery is very rare within the culture deposit. Still, at least one find may be said to have been made within the deposit under such conditions that it must be considered to belong to it. This is a large fragment of the Yang Shao chess-board pattern, which was found by Li at a depth of 1.5 m., together with the coarse footed ware that is so characteristic of this site. It is possible that this site is slightly older than those typically Yang Shao containing an abundance of painted pottery, but the said find (and possibly a few other finds of painted fragments) seem to indicate that the difference in age cannot be great.

During my last visit to the Ch'i Chia P'ing site I took a walk across the wheat-fields covering the site and noticed then several small sherds of typical Yang Shao pottery scattered over the surface. From this observation it seems quite likely that here is a slight surface diffusion of Yang Shao sherds over the surface of a pure Ch'i Chia site and that the Yang Shao sherds found in deeper levels are simply due to the farmers having moved masses of soil when laying out their cultivation terraces.

P'ai excavated a high grey foot made upon the potter's wheel, which is probably of more recent date. It was said to have been found near the surface.

In one of the exposures I noticed a modern fragment with black glaze at nearly one metre's depth. These observations are made to emphasize that the greatest caution should be exercised when dealing with these sites.

The P'ai Tzu P'ing Site is situated on the level terrace plateau about one li NE of P'ai Tzu P'ing village. Between this village and the site the plateau is quite unbroken, but at the site we meet the uppermost parts of some ravines extending eastwards towards the place named Tung P'ing and mentioned below. One of these ravines has cut the site into two parts, as the main bulk of the graves was found on the northern, though a few also on the southern side of the ravine.

Here the villagers had in the early spring made excavations with the aid of the iron "sondes" and much to our regret we found that hardly any undisturbed graves were left for us to excavate. Three days were spent here with very poor results, the entire harvest being the following very imperfect notes on four skeletons which had been more or less disturbed by earlier excavations:—

- Skel. 1.* Three small pots and a great number of small white stone beads found near the pots. No human bones.
- Skel. 2.* Scattered fragments of a skeleton, one pot.
- Skel. 3.* A skull and three pots, a large painted one broken, one small painted nearly complete, one not painted.
- Skel. 4.* Was excavated in our presence by some Mohammedans. I was not able to make detailed observations but could state that two pots were found close to a skeleton. These two pots, which I bought, are of great interest as—though not painted—in shape and the technique of the ware, they correspond closely to the Hsin Tien ceramics.

To judge from the pots bought at this place and from the numerous fragments scattered over the site, there is no doubt that in its essential features this locality is of the Pan Shan burial-site type.

The Tung P'ing Site, is situated 3 li ENE from P'ai Tzu P'ing village. It is situated on a terrace close to the river and 45 metres above the level of the river. Here at the edge of the terrace was found, within a small area, an abundance of ashy earth—in one place more than 3 meters thick. The furniture of this dwelling-site typically Yang Shao.

THE SSU WA SHAN SITES .

The Rev. Robert Ekvall of the Titao mission had kindly reported to me the occurrence of "hei tu" (dark earth) with pottery at a place called Ssu Wa Shan

(寺窪山), situated in Ti Tao Hsien (秋道縣), 35 li (20 km) south of Titao city. During a trip which I undertook with him to a coal mine, 80 li south of Titao on the 7th-9th July we had an opportunity when going up on the 7th of confirming the accuracy of the report, and upon our return on the 9th I stayed for one day and was then able to prove the existence here of a dwelling-site of Yang Shao type and a burial place of a more recent period and of a peculiar type, so far only known from this place and named the Ssu Wa type.

A few days later I sent two of my collectors Chuang and Li, and they worked on the burial site from the 13th to the 15th of July. Unfortunately I was unable to return for a survey of the place so that the following is based only upon my recollections from my short visits on the 9th-10th July.

Ssu Wa Shan is a village situated the west side of the T'ao river at the base of a low terrace something like ten metres high, to judge from memory. At the edge this terrace, just above two natural springs of pure cold water, is a temple used as a school. Almost due west of this temple is a road, and the sites are on both sides of this road, partly exposed in the wall of the road ravine.

In the western wall of the road ravine we first noticed some places where ashy earth was exposed, one of them yielding a quite useful collection of typical Yang Shao dwelling pottery, amongst which was a nearly complete bowl painted both inside and out. A pocket containing Yang Shao pottery, mostly coarse monochrome vessels, was also seen NE from the first mentioned place east of the road and at a somewhat lower level.

These observations seem undoubtedly to indicate that we had found at this spot some traces of a dwelling-site of the Yang Shao stage.

On the west side of the road, where the loess cliff formed by excavating earth attains its maximum height, something like 6-7 metres, we were shown by the villagers a place where numerous pots had been unearthed together with human skeletons. Moreover, a considerable number of pots were offered us for sale, the prevalent type being a monochrome vessel, both very small and large specimens, a vessel the peculiar feature of which is that the mouth is not circular but oblong when viewed from above, and is considerably higher where the ears are attached to the rim. In addition to these flatbottomed vessels we also bought tripods of

very small size resembling the Ting type, and a considerable number of medium-sized Li-tripods. The majority of these are monochrome and this type belongs most certainly to the same grave type as the oblong-mouthed vessels. Two painted Li, one of them especially beautiful, were said to have come from the same burial site, but this could not be confirmed by our all too limited diggings. We were also shown a bronze object, drawn from memory (Fig. 40). It was made of a yellow

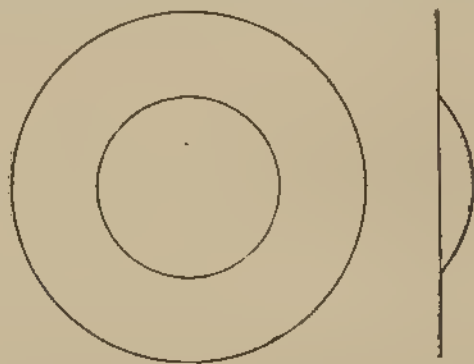


Fig. 42. Bronze object at Ssu Wa Shan.

brass-like material, the appearance of which made me disinclined to believe that it had anything to do with the other finds, but Chuang's find of a bronze armlet has later brought me to reconsider the matter. A number of stone axes said to have come from this place were also bought by us.

Chuang with the assistance of Li excavated altogether eight graves, and No. 1 is specially noteworthy. Together with the incomplete skeleton there were found near the position of the head a Li tripod, a stone axe of the Chou type, and at the left side of the pelvis a complete armlet of bronze.

A feature worthy of notice is that in two cases (graves 2 & 8) remains of domestic animals seem to have been deposited beside the dead.

THE MA CHIA YAO (馬家窑) SITE.

This site is situated in Ti Tao Hsien (狄道明), 20 li (12 km.) S of Hsien city on the west side of the T'ao river, which flows at a distance of about one li E of the site. Ma Chia Yao is a small hamlet situated on the river-plain. Close to the W

of the village rises the Ma Lan terrace, which may here be estimated at a height of about 50 m.

S of the village is the mouth of a ravine, which, dissecting the Ma Lan terrace, extends towards the W. In the mouth of this ravine there is a lower terrace, remnants of which are seen on the N as well as the S side of the ravine. The terrace is more extensively developed on the north side, and upon it is found the culture deposit which forms the site. This lower terrace was measured and found to be 24 m. above the stream level in the ravine at the place where the measurement was taken. The upper (Ma Lan) terrace was estimated to be double, or slightly more than double the height of the lower terrace, consequently it may be conjectured to be about 50 to 60 metres in height. On both the south and the north sides of the ravine there rise hills above the Ma Lan terrace, hills which might be counted to the "post-pliocene peneplain."

The schematic section Fig. 43 gives some idea of the relationship between the lower and the upper (Ma Lan) terrace, without any pretention to accuracy in the dimensions.

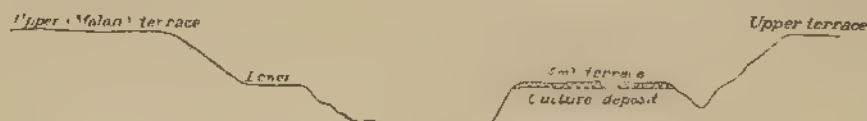


Fig. 43. Section at Ma Chia Yao

The extent of the culture deposit in an E-W direction is 350 meters. In a N-S direction the extent is much smaller. The terrace deposit is intersected by several small gullies, in the walls of which there are numerous excellent exposures of the culture deposit. This deposit is largely of the usual ashy type without any stratification, but in a big gully in the NE part of the deposit was noticed a well-stratified deposit of loess-like material with numerous pieces of charcoal and artifacts of the type common in the rest of the deposit. This stratified deposit had a thickness of 2.5 m. and is overlaid by 3-4 metres of unstratified loess-like material in which there is no charcoal, and artifacts are scarce or entirely absent.

The typical ashy earth also attains to a thickness of two metres and possibly locally more. In some places also this type of deposit shows stratification, often under a rather steep dip indicating a refuse slope.

Almost everywhere there are 2-3 m. of barren, loess-like material overlying the culture deposit.

In this place it was noticed that the pottery sometimes shows the same yellowish-green mineral coating as was first noticed at Yang Shao Tsun. In addition to the painted pottery there are numerous fragments of monochrome wares, partly ornamented with coarse cloth impressions, partly polished smooth like some finds at Yang Shao Tsun.

This site is conspicuous for its excellent bone objects. On our visit to the place on 4/7 (Chin found at one spot) in the stratified deposit of the above-mentioned big gully five triangular bone arrow-heads (?), three of them complete.

THE BURIAL SITES OF THE PAN SHAN AREA

Map XV

In the spring of 1924 when we stayed in Lanchow, our principal aim when inquiring about the provenance of the pots offered to us was to find out the district from where came the magnificent large funeral urns of the Yang Shao age which had been offered for sale in an ever increasing number. When finally my servant Chuang learned about the sites in the T'ao valley, and I sent him there for a preliminary reconnaissance, I heard for the first time of the remarkable burial sites at Pan Shan, high up on hills overlooking the T'ao valley.

After having received Chuang's report I left Lanchow with my men on April 23 and settled first at Hsin Tien in T'ao Sha Hsien to survey the rich and varied sites of that area. From this region we moved up the valley to P'ai Tzu P'ing and surveyed the sites which here occur upon the Malan terrace, among them the rich and highly interesting site at Ch'i Chia P'ing.

We were now working in the valley underneath the Pan Shan hills and finally the opportunity arrived to inspect the much longer-for burial sites. My first impressions of this visit I here reproduce by quoting the following lengthy passage from my popular book *Children of the Yellow Earth*, pag. 267-270:—

"It was on June 26th that I had an opportunity of myself visiting the sites.

We left our quarters at P'ai Tzu P'ing down on the Ma Lan terrace early in the morning, accompanied by Chuang and two Mohammedan porters and guides. All the cemeteries of the prehistoric period in question which we had hitherto examined had been situated close to their respective dwelling-sites, or in other words, the prehistoric habitations and cemeteries had lain side by side. It therefore seemed to me most surprising when our guides led us out of the valley higher and higher up the western slopes. We ascended hundreds of meters. The fertile valley bottom now lay far below us like a deep green ribbon, and the view began to extend over distant valleys which I had not seen before. I asked the men if we should soon arrive at the graves.

"No," they answered, "higher, much higher, up."

Two hundred metres higher up we rode along paths which wound in sharp curves up the steep valley side. We had now reached an entirely different landscape. There was an open view for 50 km. on all sides. I looked out upon a number of hills and ridges, all of about the same height, and thus constituting an old, but now broken, plateau, which in the east continued unbroken as far as the horizon, but on the south and west at a distance of about 30 miles was bounded by a high dark wall of mountains which marks the boundary of the Tibetan highlands. We were now 2,200 metres above the sea and the mountain wall to the south-west was between three and four thousand meters high.

We had reached a height from which we had a completely open view in all directions. Here I saw the traces of extensive excavations and in the earth thrown up were visible everywhere fragments of painted vessels of the same kind as the magnificent, intact vessels which we had bought at Lanchow. It was evident that many vessels had been crushed in the graves by the pressure of the earth and that others had been broken in the competition of the villagers to despoil the old graves of their treasures.

The extent of the cemetery was clearly indicated by the recent excavations, which had fairly completely plundered the whole of the site. The cunning Mohammedans had made yard-long iron probes, with which they had dragged the ground and with striking accuracy localized every burial urn which was not more than one metre below the surface.

After we had hastily examined this first site, my guides conducted me to a second cemetery of the same kind, and it soon became clear to me how many hundreds of graves containing burial ware of unique size and beauty had been looted by a desecration which had for all time rendered impossible a scientific investigation of the connection between the various objects in the graves. It was poor comfort that we had been able to acquire by purchase almost all the more interesting burial urns. It is more important that, but for the large scale urn business in Lanchow, we should not have known at all of the existence of these remarkable sites.

When I had thought out, with very mixed feelings, the course of events, I sat down and tried to reconstruct the conditions under which these, in many respects unique, accumulations of graves had come into existence. Each of the five grave sites is situated on one of the highest hills in the district, surrounded by steep and deep ravines, 400 meters above the floor of the neighbouring T'ao valley. Continued investigation fully confirmed my first surmise that these cemeteries, situated on the highest hill-tops must have belonged to the habitations of the same period down on the valley terraces. It then became clear that the settlers in the T'ao valley of that age carried their dead 10 km. or more from the villages up steep paths to hill-tops situated fully 400 meters above the dwellings of the living to resting places from which they could behold in a wide circle the place where they had grown up, worked, grown grey and at last found a grave swept by the winds and bathed in sunshine. (Pl. XLVII, XLVIII).

It must indeed have been a strong, virile and nature-loving people which was at pains to give to its departed such a dominating resting place, and as I sat there on a grave mound that sunlit day in June I tried in imagination to reconstruct the funeral procession which assuredly slowly wound its way with great pomp and now forever forgotten ceremonies up the mountain sides. 11

It was now a question of saving what remained of undisturbed evidence of the old graves, and in order to facilitate my work, I removed the whole of my staff to the nearest farm where suitable quarters could be obtained.

For a long time we sought for graves which had escaped the ravages of the villagers. For several days it looked as if the whole district had been completely plundered, but finally Chuang made a magnificent discovery at Pien Chia Kou. It

was, in fact, the most splendid grave which we found during the whole of the Kansu expedition.

One exquisitely painted jar after another was laid bare during our careful excavations, and in the end we beheld twelve burial urns placed round the skeleton of a full-grown man, who lay on his left side with his knees drawn up. Two polished stone axes and two whetstones close to his head completed the ample equipment of the grave."

As the finds from the Pan Shan area will be described in detail by me in a special monograph, I here give no record of these finds.

SITES SE OF LANCHOW.

At the beginning of 1924 I sent my collector Chuang to the region SE of Lanchow and he succeeded in locating there some sites which were more closely studied during a second trip undertaken by my assistant Mr. P. L. Yuan (袁復禮), in company with Chuang.

As shown in map III, there are three sites in Kao Lan Hsien (皋蘭縣) (the hsien name of the district round Lanchow). Regarding these three places Mr. Yuan gave me the following report: They are reached through the mid-station between Lanchow and Chin Hsien, called Chu Tsueh (猪嘴) 50 li SE of Lanchow. Ch'en Chia Hsien Tzu (陳家砦子) is 15 li directly south from Chu Tsueh, 5 li further west is Ta Shih Ch'uan (方石泉) the east end of the village is full of exposures, and some bones even stick out from the high cliff NW on the village dwellings. 2 li further on is Kao Ying (高營); the actual diggings were carried out in the sown fields above cave-dwellings. This is said to be of great promise as a likely place for finding large complete pots. Kan Pa Ling (干巴嶺) was not thoroughly explored, but one large beautiful pot was said to have come from that place.

From Yü Chung Hsien (榆中縣) Mr. Yuan reported the existence of quite a number of ancient sites and the whole district seems quite promising. From one of these localities Yuan brought a number of very interesting objects, accompanied by the following note:

Hsiao Shih Chia. (小石峽).

The site is east of the ravine above the houses. The exact digging places are along the bank of the topmost terrace immediately N. of the four trees on the next



Fig. 41. Hsiao Shih Chia Sites. Scale approx. 1:2,000 (P. L. Yuan).

terrace. There are four digging places marked A. B. C. D. It is at A that a set of four pots was dug out—one of them broken. A green turquoise pendant was also found at the same place. At D were some stone knives |broken| half-broken rings |clay, one flat needle about $4\frac{1}{2}$ in. long.

Note on *Ts'ao Chia P'ing* (曹家坪) in Ti Tao Hsien (秋道縣), on the west side of the T'ao (洮) river just opposite Ti Tao Hsien city. Our attention was first attracted to this place by the Rev. G. F. Andrew, who kindly brought me some

urns bought there. Later the site was visited by Pai, but was found to be very poor.



Fig. 45. Hsiao Shih Chia. A. Side view (a) and plan (b)

SITES IN CHEN FAN HSIEN (鎮番縣) AND YUNG CH'ANG HSIEN (永昌縣).

From the Nan/shan alps a number of rivers flow down into the western part of the Gobi desert. Furthest to the W, and at the same time the largest and historically the most important, is the Ertis gol, along which are a large number of sites from historical periods, sites that have been explored by Kozloff, Stein and, more recently, by the Hedin expedition (The Sino-Swedish expedition of 1927—33).

Probably second in size and importance is the river which, after passing the Chen Fan (鎮番) oasis, flows into the desert, there to lose itself in one or more salt lakes. The important city of Liang Chou Wu Wei Hsien (武威縣) is located upon the alluvial fan delta built up by the several Nan Shan streams that unite below Liang Chou to form the Chen Fan river.

The distance from Liang Chou to Chen Fan is approximately 90 km. 25 km from Liang Chou the edge of the desert is reached. From there the desert is nearly

everywhere visible to the E, though westward also there are vast expanses of low desert and entirely barren hills. Here and there along the river are irrigation canals, cultivated fields and houses. Not far before Chen Fan there is also along the river a vast expanse of pasture ground. However the proximity to the desert is felt everywhere, and it is safe to say that from 25 km. below Liang Chou the road passes through a region of prevailing desert where the river has only locally given rise to pasture land or irrigated fields.

Round Chen Fan city a flourishing oasis provides sustenance for ~~no less than~~ 300,000 people. As I stayed nearly all time at Sha Ching outside the oasis, I was not able to trace the topographical features which have here, along the course of a desert river, caused a flourishing community to spring up out of a desert region. However, when travelling from Sha Ching to Chen Fan city I passed through mile after mile of beautifully cultivated fields framed in by lofty trees and yielding the various splendid harvests which in these tracts grow easily in the desert soil when it is fully irrigated.

The fact that the Great Wall (or rather the line of watch-and defence-towers which here in the west represents the Great Wall) encircles the Chen Fan oasis, proves that the fertility of this area was already fully recognized in early historical time. The archaeological sites which we shall describe below prove that prehistoric Man was once settled in the area.

As mentioned in the introduction, during our first summer in Kansu in 1923 my collector Pai heard of sites on the outskirts of the Chan Fan oasis, and upon going there he found traces of a very interesting culture until then unknown to us. In the following summer (1924) I went together with most of my men to Chen Fan and undertook the survey of the different sites that will be described below.

We reached Liang Chou on the 8th of August and left for Chen Fan the following morning. On the third day of our journey from Liang Chou we left the Chen Fan road, before entering the oasis, at a place named Ta Pa Kd.

Here we crossed the river for the last time and then headed for Sha Ching, where Pai had made his discoveries. We first travelled 7 km. in a NE direction over ground that became ever drier and the sand-dunes more and more frequent the further away we got from the river. Yet even here were some trees and bushes

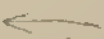
and a few cultivated fields, as well as numerous irrigation canals, now dry. Then followed a further 7 km. over real desert with only one slight depression containing some trees and bushes. For the rest there were only barren dunes (estimated at 5-15 m. high). Between the winding dune ridges there was everywhere visible the flat clay bottom, hard and perfectly level, over which the sand dunes were slowly moving. These clay flats showed in many places salt efflorescences and in others a very sparse covering of desert plants.

Finally we reached our goal, the village of Sha Ching (——). It is a tiny hamlet and one of the most desolate habitations imaginable. There is not even the smallest cultivated spot, hardly a wild plant growing in the vicinity. All is hard clay and drifting sand. The only medium for the sustenance of Man that this place is able to provide is water. In fact, it is noteworthy how near the surface both here and in many other places the ground water level is: at the surface the grim naked desert, but at a shallow depth good drinkable water without any injurious alkaline salts content.

The poor hamlet of Sha Ching has found its only *raison d'être* in the service of wayfarers. Somewhere to the west lies a salt lake whence salt is carted into Chen Fan, and it is mainly for the convenience of this traffic that the village has been built. The only thing that Sha Ching itself can offer the men and the animals is water. All the rest: straw, beans, flour and fuel, has to be brought from the oasis. There is apparently only one product of this spot that attracts the inhabitants of the oasis. On the clay flats between the dunes grows a hairy leguminous plant that is collected by the oasis dwellers and taken by the cart-load to the oasis. My inquiries revealed the interesting fact that this plant is used as a fertilizer specially for the melon plantations, and it should be added that the oasis produces excellent melons, both the ordinary melon, *tien kua* (——), and the water melon, *hsi kua* (——). As is the case everywhere in the oases of this desert world, the melon thanks to the copious sunlight is very rich in sugar. So rich is this food that we ourselves, under the spell of the terrific highsummer heat, used the *tien kua* as our staple food and the *hsi kua* as a very refreshing drink. I imagine that this exclusive vegetable diet helped us to endure the oppressive heat, which at the height of the day was such that only for a few minutes at a time could we stand the contact with the burning dune sand.

Sites near Sha Ching.

Pai's reconnaissance in 1923 had revealed the fact 3 km. in the direction S 30° E. from Sha Ching there was a group of sites, viz.—

- a. the Sha Ching S.  grave field,
- b. near this grave field a walled-in place called Liu Hu Tun.

These two sites, which are marked in red on Map XVI, are contemporaneous, the fort Liu Hu T'un probably being the dwelling-place, where lived the people who their dead in the grave field. This cultural stage I have named the *Sha Ching stage*.

During the survey of this area as shown by Map XVI, I found two further, apparently more recent cultural stages represented, namely:

- c. a group of 30 small hut ruins (marked blue in the map). To judge from finds these ruins date from the Han dynasty.
- d. an irregular heap of earth and debris amongst which many glazed sherds.

This spot, which is possibly the entirely-crumbled ruin of a small watch tower, is marked yellow on the map. To judge from the type of crockery found it can hardly be older than Sung.

After this general orientation we shall proceed to a study of the topographical features of the area represented by Map XVI.

The substratum underlying all the other deposits marked in this map is left white without any special pattern. It is a level hard ground of whitish grey clay. Locally, as for instance to the north of the Liu Hu T'un Fort, small fresh-water shells are seen upon the surface of the hard clay bottom, and this find seems to indicate that the clay was formed in some kind of a fresh water basin.

The second topographical element is moving dune sand, forming a network sand-ridges covering approximately half of the mapped area. These sand-ridges are markedly asymmetrical, with a gently rising windward side to the W and NW and a steep leeward slope to the E and SE. The maximum altitude of these dunes is 13.3 m. measured from the top of the ridge between the grave field and the main group of the ruins.

It should be recognized that this blown sand is a moving mass and that consequently a survey made today, thirteen years later, would no doubt show a somewhat different picture. Most probably the extensive western dunes may have begun to encroach upon the grave field. The big dune-mass crowned by the figures 13.3 and 10.7 may have swallowed up one or more of the central group of hut ruins and on the windward side of this dune-mass more hut ruins than those shown in H 24 may have been uncovered.

When we consider this present unstable topography of the area, we shall very soon arrive at the conclusion that no dunes existed in the area when first people of the Sha Ching stage and later the settlers of the Han dynasty lived here. As we shall see in the following, the Han huts are certainly the later of the two groups, even if the difference in age is not very great. And it is entirely unlikely that the people of the Han time would have built their small houses in the present environment with the risk of having their buildings submerged in sand after a few years. Consequently we are forced to believe that the area was free from moving sand at the beginning of the Christian era. What it was like a thousand years later, what may be the approximate date of the "yellow" hap of glazed crockery, it is difficult to tell. This watch-tower (?) ruin is so isolated that it might possibly have been built in spite of the dunes in order to provide an observation post on the outskirts of the oasis (it should be noted that the nearest part of the oasis is sufficiently close to permit of the tree tops being seen from one of the highest dunes rising above the more distant ridges. (Pl. ————))

We shall now describe one by one the different ancient sites of the area shown on map XVI.

The Liu Hu T'un Fort. (六湖堡). This fortified dwelling-site is shown not only on Map XVI but in Pl. as well. Moreover Fig. 46 in the text gives a section through the fort and its surroundings.

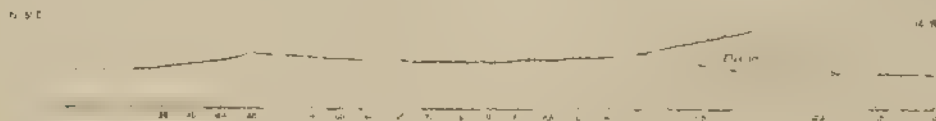


Fig. 46. Section through the Liu Hu T'un.

The walled-in place is quite circular and has a diameter of 45 metres. The wall was built of clay, apparently taken from the surrounding level clay ground.

It is evident that this loose mud wall has in the course of time crumbled away, and the mud has gradually spread out to form a gentle slope, which gives hardly any idea of the appearance of this fortification at the time when it was in use more than two milleniums ago.

Fig. 46 shows a section, which I surveyed, through the fort and its surroundings. To the extreme left is seen the level clay ground, then follows the gently rising northern exterior of the mud wall. Inside the enclosure the ground is 1.5 m. higher than it is outside, certainly due largely to filling, intentional and otherwise, during the building of the fort and the time when it was in use. Nearest to the circular wall is a gentle slope just as on the outside, probably indicating that a mud-flow occurred from the wall on the inside as well.

In the sectional line two test diggings were undertaken. One at metre 56 went down 2.2 m. in more or less sandy clay, which to a depth of 1.7 m. contained pottery of Sha Ching type and pieces of charcoal. The lowest 0.5 m. was barren.

The second test pit was dug between meters 76 and 80 to a depth of 1.4 m. in entirely barren, slightly sandy brownish clay. 0.5 m. below the surface there were two dark-coloured bands, each about 2 cm. thick, the one 8 cm. above the other, the lower one was the more persistent. It should be emphasized that all this digging in the central part of the fort yielded absolutely nothing. This barrenness stands in sharp contrast to the abundant finds made when excavating close inside the wall, as shown in Pl. This indication of a barren area in the centre of the fort coincides in a striking manner with the exactly similar conditions indicated still more clearly by the large and more strongly built San Chio Ch'eng (三角城) fort in Yung Ch'ang Hsien (永昌縣), 70 km. W of Sha Ching.

The Sha Ching S. Grave Field. 260 m. to the west of the Lüi Hu T'un fort lies the the Sha Ching S. Grave Field, covering an area of 150 m. in length and 130 m. in width. This gives for this grave field an approximate area of 19,500 sq. m. as compared with the sq. meters of the Lüi Hu T'un fort. I mention these two figures side by side because there is hardly any doubt that the people living in the fort buried their dead in this grave field, and the cemetery seems surprisingly large when compared with the narrow space of the fort.

There was no surface indication of tombs at this place except the fact that the local population had noticed that human bones, carnelian beads, cowrie shells

and small bronzes came to sight within this area when the rare but violent rains and persistent winds had swept the barren clay surface. It was this fact that had been reported to Pai in 1923 and brought to our knowledge a desert culture abounding in enigmatic features.

For the burials excavated by Pai in 1923 the numbers 1-9 have been reserved, and these finds will be accounted for when the objects from this grave field are described in a special monograph.

Graves 10-53 are recorded in their relative position within the burial site on Map XXII drawn to the scale 1:500. The very simple survey was carried out as follows: an arbitrary point P was chosen, as far as possible in the centre of the grave field. Here the plane-table was put up every morning when we arrived for the day's work, and it was given its proper orientation with reference to a second mark not shown on the map. As soon as a new grave had been fully excavated and before the objects were removed from it a bearing was taken on the skull and the distance measured with the tape. Each individual burial accompanied by its number in our record is shown on the map by a dot indicating the skull and a line giving the direction of the skeleton. When the direction of the burial could not be ascertained because of the imperfect condition of the grave, only a dot indicates the position of that individual burial.

Details about the burials 10-53 excavated under my supervision are shown in the record of the field notes and in the tables on page, with the anatomical observations which Dr. Davidson Black kindly drew up for this publication. These details will be fully discussed in the monograph on the finds.

The Han huts. A peculiar feature of Map XVI is the small blue dots between the two largest group of dunes. They are numbered from H₁-H₃₀. The great majority of them are found between the two big dunes, as just stated. But three, H₂₈-H₃₀, are seen in the southeastern corner of the map, one, H₂₈ is on the north side of the biggest dune complex, direct E from the grave field and another, H₂₉, is to the SW of the grave field, just to the west of a narrow and low dune ridge.

In their present state these ruins are only a small heap of débris but débris of a very significant kind, for it consists chiefly of small *slag bricks*. These slag bricks constitute one of the several enigmatical features of these sites. All round

Sha Ching, and for a considerable distance beyond, the desert is strewn with these slag bricks; even at such a distance as at Huang Hao Ching 12 km. W from Sha Ching fragments of these bricks were seen, though relatively scarce. It would have been a very tempting enterprise to trace the slag bricks back to the place where some kind of smelting industry must have been carried on by the people of the Han time, but my interest was so fully absorbed by the survey of the remains of the Sha Ching period that no time could be spared for such a reconnaissance. Some small barren rock hills rise out of the desert not far from this region, and these hills should be examined in the hope of finding the ore deposit that gave rise to this ancient industry.

It has already been said that the ruins in their present state are only heaps of debris. It is merely a surmise, but probably the only possible one, that these heaps mark ancient huts built of the slag bricks. In their present shape the heaps ~~the heaps~~ are rounded, circular, horseshoe shaped or most commonly, elliptical. Their dimensions are as a rule very moderate. Thus, for instance, I have noted in my field note-book that H₁ was 5 x 2 m., H₂ 7 x 3 m., H₃ 7 x 4 m. To judge from the map the biggest one, H₇ was not less than 17 m. in length.

The chronological relationship of these hut ruins to the Liu Hu T'un fort and the Sha Ching S grave field will be fully elucidated when the finds are described. The small objects found in the hut ruins show beyond doubt that these ruins date from the Han dynasty. That small sherds of the Sha Ching type were found together with typical Han pottery in these ruins is of course not surprising. But the significant fact is that I never found any indubitable Han object, no Wu Shu coin and no piece of grey Han pottery in the Liu Hu T'un fort or in the Sha Ching S grave field. For this reason I am inclined to believe that the Sha Ching period remains are older than the Han huts, although the difference in age is possibly not very large.

The ruin with glazed pottery. 95 metres south of the Liu Hu T'un fort, on the other side of a dune ridge, is an irregular heap, some few metres high, 37 m. long and 32 m. wide, full of sherds, among which glazed crockery is very common. Possibly this is the much-decayed ruin of a watch-tower from a relatively recent historical period.

Site N from Sha Ching. 1.5 km. N to E from Sha Ching village Pai located site. A few finds: on level ground in sand mixed with gravel some bone fragments, both of sheep and horse. Also a bone arrow point.

Site N from Sha Ching. In 1923 Pai found on level ground 3 km. N from Sha Ching a number of bronze objects and other things, possibly belonging to a rich man. When I visited the place in 1924 together with Pai no further finds of importance were made.

Sites NNE from Sha Ching. 3 km. N 20° E from Sha Ching near a lone tree there is another walled-in place which I marked in my field note-book as Fort 2. Its wall is very low except on the north side, where it is four metres high. The diameter of the walled-in place is 42 m. When digging we found some pottery, numerous bones and two small stones.

Close to the E of this Fort 2, on the other side of a dune ridge, we found within a small area numerous pieces of pottery with simple impressed pattern.

1.5 km. in the direction N 35° E from Fort 2 another walled-in place, Fort 3. Halfway between them a group of slag brick houses. Here also a small house roof of reddish pottery, probably a mortuary piece.

Of the fort wall only the W and S parts were preserved. The wall seems to have been not circular but slightly elongated, the maximum diameter 110 m. See fig. 47. Upon the southern parts of the wall there had been built, at a much later time, two small watch-towers made of sunbaked bricks placed as shown in fig. 48.



Fig. 47. Port 3, a seen from S b in plan.

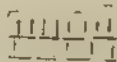


Fig. 48. Wall of sunbaked bricks.

Here are all three kinds of pottery: the red of the Sha Ching period, the grey Han and the more recent glazed crockery. The first named group of pottery certainly belongs to the fort, the Han pottery to the brick huts and the glazed ware to the towers superimposed upon the fort wall. It is striking how fully the features of the Sha Ching S. group of sites are here repeated: in each of the two places all the three kinds of architectural structures and all the corresponding three kinds of pottery. Possibly it was these two places that have yielded water more easily than the rest of the Sha Ching region and have thus invited repeated settlement at very different epochs.

Sites near Huang Hao Ching (黃蒿井). On the 1st September we started from Sha Ching to survey some sites further west which had been reported to and visited by Pai in the previous year.

The dune landscape with which we had become so familiar all round Sha Ching lasted only for two km. in a westerly direction. Then for a distance of ten km. we travelled to Huang Hao Ching over a level desert surface free from dunes but covered with gravel, a veritable "Kieswüste," to use the German term.

In the surroundings of Huang Hao Ching Pai had reported three sites, two of which were visited by me:

Huang Hao Ching SW 7 km. / Pai Tung. This place was visited only by Pai in 1923. He found here some pieces of unpainted red Sha Ching pottery, and numerous sherds of grey Han pottery.

Huang Hao Ching SW 1 km. Here Pai had found a skeleton, a fragment of a big painted pot and a cylindrical red bead. On our visit no further finds.

Huang Hao Ching. NW 1.5 km. Here I found a very remarkable feature named in the field note-book "the contours." This means that on the absolutely level ground there were rectangular, quadratic and circular spots where the colour of the ground was slightly different from the local ground in general. At the surface these "contours" looked more whitish than their surroundings, but when digging into them we found that the soil was darker than is usual here. The circular contours are only 1.5 m. in diam. Some of the rectangular ones are shown in the sketches fig. 49, which gives dimensions as well as directions. The ground where these "contours" were measured is absolutely level, without any rise to

indicate the débris of crumbled-down house walls. Nevertheless I can only interpret these strange outlines as indicating the former existence of some kind of houses or tents (?). Inside the "contours" we found pottery of the Han type, often in large fragments. The previous year Pai had found in this area parts of a bronze bowl and a small belt hook, but it is not definitely proved that they came from one of the "contours."

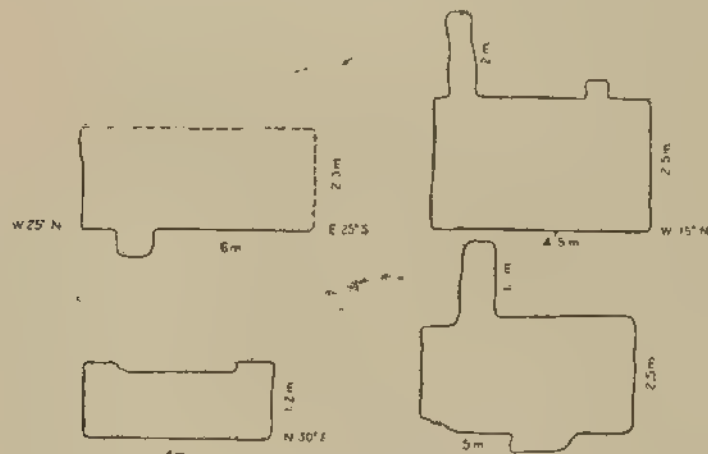


Fig. 49. Huang Hao Ching. Contours.

Some tens of meters N of the ground with the contours I noticed a small gravel area containing much pottery of the reddish type characteristic of the Sha Ching period. In the midst of this spot there was a small heap, only some few metres in diameter and 0.3 m. high, with a great many small pieces of slag, charcoal and a rusty substance that may have been iron. Possibly this had not been superposed upon the Sha Ching age deposit until much later.

Separated from this place by a dune ridge was a site containing an abundance of grey pottery, numerous bronze arrow-points and Han cash.

Yung Ch'ang Hsien (永昌縣). *San Chiao Ch'eng Fort.* (三角城). From Huang Hao Ching we travelled further west for a distance of about 55 km. over preyingly desert ground with some few poor habitations. We had then left Chen Fan Hsien and entered the outskirts of Yung Ch'ang Hsien. Our aim was now to survey the remarkable San Chiao Ch'eng Fort of the Sha Ching period, by far the

largest and strongest of the walled-in places in this borderland between desert and arable land.

The San Chio Ch'eng fort is situated within a distance of some few li from the small place Hsi Wan, where we stayed during the days 2nd-6th September. The fort is shown in Map XVII and Pl.

The immediate surroundings of the fort are entirely treeless, an almost entirely barren clay ground with small sand-dunes partly covered with vegetation of shrub and other desert plants; some distance away there are small villages with some cultivated fields and groups of trees.

The fort forms an irregular rectangle with the gate (or possibly one of the gates) on the SE side. It is 177 m. in length along the sectional line A-B and 120 m. wide. The area of the fort including the wall is square metres. Like the Liu Hu T'un fort this wall was built only of mud, but it is very much more solid and has withstood the eroding effect of time surprisingly well. At the southeastern gate it can clearly be seen that the wall was originally six meters thick. As it stands now it is in most places only 3-5 m. high, but in the western part it is as much as 7.0-7.6 m.

The conditions inside the wall as shown both by the plan and the section Map XVII are very interesting. In the centre there is a quite level area (marked white in the plan). This area, which is on exactly the same level as the desert ground outside the fort, is quite clean and free from all kind of debris. From the inside of the wall there extends all round a sloping zone consisting of ashy earth with artifacts predominantly of Sha Ching type, although a few of the finds seem to remind us more of Han objects. This sloping belt inside the wall abounds in pebbles of the size of an apple or a fist. It is noteworthy that no such pebbles are to be found immediately outside the wall, and similarly the central level area of the fort is entirely devoid of pebbles as well as of pottery fragments. It seems as if the houses were built close inside the wall and that the central area was kept open as a place for common use.

A noteworthy feature is that the contains lumps of clay which are burnt even to the extent that one side of the lump is red burnt clay but the other porous slag. On a smaller scale the same feature was noticed within the Liu Hu T'un fort.

The Yang Shao site outside the San Chio Ch'eng fort. It should be noted that until September 1924 we hardly knew of any Yang Shao site north or the Huang Ho and Hsining Ho valleys. A small body of material obtained in 1923 by one of my collectors at T'u Men tzu (土門子), in Ku Lang Hsien (古浪縣), added but little to our knowledge as it was very poor.

It was then a great and very pleasant surprise when a rich Yang Shao site was found by me close outside the San Chio Ch'eng fort.

On the 5th September I had made up my mind to take a photo of the fort from the W in the afternoon. When at two o'clock I took my camera and walked out of the fort for a distance of 150 metres from the western side of the wall to slightly higher, pebble-strewn ground, my attention was here caught by a sherd of typical Yang Shao painted ware. A search round revealed the fact that the ground on this spot was strewn with stone implements and pottery fragments of Yang Shao type. I called out my men who were excavating inside the fort, and in the course of a couple of hours we found quite a considerable amount of Yang Shao material, including also entire pots broken into many pieces lying close together. As these finds covered a considerable area and we noticed here the black earth characteristic of dwelling sites, the locality must be noted as very promising. Unfortunately that was the last day we could spare for this area, so there was no possibility of following up the discovery with a detailed excavation and a survey of this promising site.

The Ssu Fan Tung site. (Not marked on the map but situated 15 km. NE from Hsi Wan). On the 6th September, when we left Hsi Wan to return to Chen Fan, I rode with Pai in a NE direction 10 km. across desert ground with small dunes to T'ao An Chuan, a tiny hamlet with water enough to irrigate some millet fields. From here we continued 5 km. in the same direction over absolutely barren clay desert with sharp "yardangs" until we reached Ssu Fang Tung, a very large clay tower with a smaller one beside it. (Pl.). The big tower has still remaining horizontal projecting wooden beams (one of them visible on the plate). In the immediate vicinity of the tower there was much glazed crockery of the same type as at the Sha Ching towers. At some distance from the tower there was hardly any of this glazed ware; there is no doubt therefore that this pottery marks the

age of the big tower.

S, SW and SE from the tower over a large area were found quantities of grey Han pottery. Here also were numerous pieces of iron, triangular bronze arrow-heads and Han cash. (I had bought quite a large collection of coins and bronze objects from a villager in T'ao An Chuan. They were reported to have been collected at Ssu Fang Tung, which seems quite likely.) The year before Pai had obtained from here a pot-handle with ~~the~~ characters ~~two~~ fragments of a bronze mirror and a small chain of gold.

Within the whole vast Ssu Fang Tung field I noticed only one single piece of slag brick. At San Chio Ch'eng also and at Huang Hao Ching slag bricks were very rare.

As I had an understanding with the directors of the Geological Survey of China not to excavate within sites from historical periods, I did not make any attempt at a survey of the very imposing ancient monuments existing in the desert area of Ssu Fang Tung. But I wish to leave it as a legacy to future archaeologists travelling in this region undertake a serious study of this area, confident that it will certainly yield important finds.

GRAVES OF THE SHA CHING S. GRAVE FIELD.

During the fieldwork I used the word *Skeleton* when numbering the individual burials. This term became rather a misnomer when no human bones were found together with a pot or other artifact. But in order to avoid confusion I have kept to the term once given which was used not only in the field notebook but on all the labels as well. When once attention has been called to this inadvertency, it will hardly cause any confusion to the reader. What now appeared only as an isolated pot once was most likely a complete burial, the human bones of which have been entirely dissolved.

In previous accounts of graves we have indicated the direction of the skeleton viz. N 5°E head—S 5°W. Here this reference has been shortened to Head N 5°E.

Horizontal-dorsal means that the skeleton rests horizontally upon its dorsal side.

~~Most~~ Most of the data given in this report are entered in the tables on page .

For the sake of completeness, however, it has been deemed advisable to repeat here the full field report as written down in the field notebook.

Numbers 1-9 are reserved for Pai's excavations in 1923.

- Skel. 10. (Li /). Bones crumbled. Four bronze objects. Head approx. N 10° E. Clayey matrix.
- Skel. 11. (Li /). Bones crumbled. One bronze button. Head approx. N. Matrix gravel + sand + clay.
- Skel. 12. (Pai /). Some teeth. Head approx. N. One monochrome pot. Clayey, partly rusty matrix.
- Skel. 13. (Chin /). Some teeth and crumbled bones. Head approx. N. One small painted pot 35 cm. NE from teeth. Matrix sandy.
- Skel. 14. (Chin /). No bones. One plain pot. Matrix sandy.
- Skel. 15. (Li /). Half maxilla, some vertebrae and costae. Head approx. N. 2 white, 2 red beads. Sandy matrix.
- Skel. 16. (Pai /). A good skull (kept), and bones of upper half of body. Head approx. N. Matrix sandy.
- Skel. 17. (Li /). Nearly complete skeleton. Skull incomplete. Head N 8° E. Skeleton horizontal, resting on dorsal side. Three red and two green beads at the neck. Two cowries at the ears. Large number of white beads between the pelvis and upper part of femora. Matrix sandy.
- Skel. 18. Skeleton horizontal, resting upon ventral side. Head turned to the right. 3 cowries near left hand. 2 red beads, one at the neck, one between sacrum and upper part of femora. Matrix sand, covering the skeleton to a depth of 35 cm.
- Skel. 19. One pot and some bone fragments.
- Skel. 20. Skeleton at the surface of the soil. Bones quite decayed. Horizontal, resting upon dorsal side. Head N 15° E. 2 red, 1 very small green bead, three bronze objects, one bone needle.
- Skel. 21. Skeleton at 50 cm. depth. Complete, but decayed. Resting horizontally upon dorsal side. Head N 3° E. 40 cm. N from head, pot painted in rhombic pattern.
- Skel. 22. Skeleton at 50 cm. depth in clayey sand. Unusually well preserved. Position horizontal—dorsal. Head N 4° E. 20 cm. N of skull a big pot.

- bottom 35 cm. above top of skull.
- Skel. 23. An unpainted pot, too much decayed to be preserved in its entirety. Piece of edge and handle preserved. Skeleton decayed, like sawdust. Teeth preserved.
- Skel. 24. Painted pot with frieze of birds. Skeleton decayed. Teeth preserved.
- Skel. 25. (Li 16/8). A child's skeleton. (Skull preserved). white and ~~two~~ small green beads. 14 H2
- Skel. 26. (Map XXXI). Skeleton in horizontal-dorsal position. One pot N of head, another upon right side of chest. 3 red, one large and two very small green beads, all near mandible.
- Skel. 27. Skeleton horizontal-dorsal. Head N 25° E. 2 green beads.
- Skel. 28. Skull imperfect, only half a jaw and teeth preserved. Skeleton horizontal-dorsal. A pot upon right side of chest. Near the base of pot some teeth of sheep or goat.
- Skel. 29. One pot; no bones.
- Skel. 30. (Map XXXI). Head resting on left side. Upper part of body and pelvic region turned halfway in the same direction. Lower part of body in dorsal position with bent knees.
- Skel. 31. (Li 18/8). Skeleton resting obliquely upon ventral side. Skull resting upon its right side. Upper part of body also turned to the right. Pelvic region turned halfway to the right. Legs in full ventral position. Head N 10° E. 16 cm. NE from top of skull an unpainted red pot.
- Skel. 32. Three skeletons lying so close together that they could not be distinguished individually. Skulls side by side, counted from E, a, b, c. At the feet a big pot.
- Skel. 33. (Li 19/8). Skeleton in very regular horizontal-dorsal position. Head N 16° E. 40 cm. W from right humerus a pot of the type possessing two small lugs. May belong to another skeleton. Between the knees 4 cowries. Another cowrie to the right of the mandible, and there also 4 red beads and one large and 6 very small green beads.
- Skel. 34. (Andersson 19/8). Skeleton in horizontal-dorsal position. Head N. 2° W. Skull decayed, like sawdust, only the jaws preserved. One pot above right half of chest (compare Skel. 26 & 28). 20 cm. of gravel and sand between skeleton and pot.

- Skel. 35. (Li 19/8). Skeleton in horizontal-dorsal position, lower half of legs slightly lower than the rest of the body. Skull turned half way to the right side. Head N 12°E. 7 cowries, four on the outside of left knee, 3 between the femora. Some cylindrical stone beads between femora. A lancet-shaped bronze object was found in the earth taken from this excavation.
- Skel. 36. (Andersson 19/8). An entirely decayed skull, and 20 cm. N from it a complete pot with bird-frieze.
- Skel. 37. (Chin 21/8). A pot without bones.
- Skel. 38. (Chin 22/8). A pot without bones. Mouth of pot at the surface of the soil.
- Skel. 39. (Chin 22/8). A pot with raised wavy line. 35 cm. SW from this pot the remains of a skull and together with it an object of white marble.
- Skel. 40. (Andersson 22/8). A pot and below it small teeth of sheep or deer. From this pot we dug in a southerly direction to a depth of 0.8 m. without finding any trace of human bones.
- Skel. 41. (Chin 23/8). An aggregate of three skeletons. Bearing taken to the middle skull. (a).
- a. A complete skeleton resting upon the ventral side. Head approximately N 10°E. No furniture.
 - b. 65 cm. S 35°W from skull a, another skull b, with some bones. Skull imperfect, not kept.
 - c. Beneath skull a, were the knees of a third skeleton c, resting upon its back. Head N 3° W. One complete and two half cowries at the knees and one large and one small bead behind the neck.
- Skel. 42. (Pl.). Three pots standing close together in E-W. 1 to the E, 3 to the W.
- Skel. 43. (Andersson 23-24/8). A pot of a new type painted with large upright triangles. Bearing to this pot. Top of the pot at the surface of the soil, much decayed.
- 1 cm. E from this pot and in level with its lower part of skull (a), decomposed, in appearance like sawdust, nothing kept.
 - 60 cm. S from the pot and 20 cm. below its base a skull (b) of which mandible and some teeth kept. This skull seems to belong to a skeleton resting

- upon its back with the feet turned NE!
- Skel. 44. (Chin 24/8). A very decayed skeleton lying near the surface in regular horizontal-dorsal position. Head 19° E. A small white bead at left knee.
- Skel. 45. (Chin 24/8). A complete but much decayed skeleton 20 cm. below the surface. Head N. Horizontal-dorsal position. A beautiful winged bronze arrow-head at left knee. A bronze object between two vertebrae.
- Skel. 46. Two pots, one smaller (1) to the E, another larger (2) to the W, standing with the mouth at the surface. I dug south from these pots to a depth of 40 cm. but found no indication of a skeleton. *1ca*
- Skel. 47. (Chin 24/8). A very decayed skeleton near the surface. No furniture.
- Skel. 48. (Andersson 24/8). A skeleton at 10 cm. depth. Very decayed, only some teeth could be kept. Head N. Head resting upon right side. A small bead in the pelvic region and a copper object at the lower right side of head.
- Skel. 49. (Chin 25/8). A pot of unusual cylindrical shape. No bones.
- Skel. 50. (Chin 25/8). A skeleton in regular horizontal-dorsal position. Head N 7° E.
- Skel. 51. (Chin 25/8). Head 1.4 m. E 40° N from the skull of Skel. 50. Head-end of skeleton N 17° E. Horizontal-dorsal position, head resting upon left side. 10 cm. NNW from the head a small pot on same level as the skull.
- Skel. 52. A small painted pot lying on its side. Indications of some arm-or-leg-bones only. *17*
- Skel. 53. Three pots standing E-W. Counted from W, 1, 2, 3, E from the easternmost pot the lower part of a skeleton in horizontal position. Head N 18° E. A perforated stone object (E) beneath left caput femoris. A second similar object (W) on the inner side of the upper part of right femur. Only some teeth could be kept.

GRAVES EXCAVATED IN 1923 BY PAI IN THE SHA CHING
S GRAVE FIELD.

- Skel. 1. Parts of a skeleton with cross-bow mechanism of bronze and another small bronze object. *7*

Had it been proved beyond doubt that this skeleton really belonged to the Sha Ching period finds, it would form an important link between the indubitable Sha Ching period finds and the objects of definite Han age. As no single Han object was found in any of the 44 graves that were excavated in 1924 under my personal supervision, I regard it as not very probable that this find made by Pai in 1923 belonged to the graves of the Sha Ching group. It is by no means my intention to throw any shadow of doubt upon Pai's honesty or on the painstaking care he took when collecting. But quite naturally these Chinese of the servant class did not understand the significance of all the details of provenance. To them the discovery of an interesting object means everything. The trouble of "fixing" the circumstances of the find naturally seems to them a matter of minor importance. For these reasons a find such as this should be discussed with the utmost caution.

- Skel. 2. Large unpainted pot with large handle, fragment of another pot, a pendant of stone, a small painted bone object, some small white beads, some small bronze objects.
- Skel. 3. Numerous small fragments of a vessel with bird-frieze.
- Skel. 4. Large painted vessel in many pieces, a small unpainted vessel with large handle, a small stone pendant in the right hand.